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CANADIAN
PUBLIC HEALTH JOURNAL

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Venereal Disease Control*

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Toronto

THE venereal disease problem is one of the greatest and most difficult of public health problems. Its sociological and educational implications require some attention in any attempt to study means for its solution. These are as important as, if not more important than, the study of how to apply direct public health measures.

Venereal diseases, unlike all other diseases, have their origin in sex. Therefore the question of irregular sex relationships must receive some attention on the part of all students of the means to be adopted for their control. In addition to dealing with the public health aspects I propose to refer briefly to this phase of the question. I suggest that failure to bear in mind the social factors involved in the control of these sinister diseases will result in ultimate failure—perhaps even damage to the body politic.

Our attempts to deal with venereal disease in Canada date from the last Great War. The problem was not the result of the war. It was forced on our attention partly by the development of scientific means for the diagnosis of venereal disease (notably the Wassermann reaction) and to a degree because with more careful control methods in the armies of the world the size of the problem both in the army and among the civilian population was realized. The report of the Sydenham Royal Commission in Great Britain was of especial importance in that for the first time it gave us concise data as to prevalence and the damage done by venereal disease.

In Canada following the gradual development of public opinion by organized groups of citizens in various parts of the country, in May, 1918, a conference was called in Ottawa by the Honourable N. W. Rowell, President of the Privy Coun-

**Presented at the thirtieth annual meeting of the Canadian Public Health Association, Quebec, June 9-11, 1941.*

cil in the Borden Government and later the first Minister of Health for Canada. Out of this conference grew the venereal disease control scheme for Canada. At this conference a resolution was passed urging the establishment of a Dominion Department of Health under a separate Minister and undoubtedly the conference and the plans which grew directly out of it were a decided factor in the establishment of the Federal Department itself.

The direct result of the conference was the setting up of a co-ordinated plan for the control of venereal disease in Canada, the first and only plan involving financial co-operation between the Dominion and the provinces for the control of illness. So far no success has followed attempts to apply the same principle in other fields of disease control.

Under the plan the Dominion made grants to the provinces on a population basis for venereal disease control on condition that each province contribute as much annually as the Dominion for control measures within its own area. There were three parts in the scheme as finally worked out:

1. The establishment of a venereal disease department under the Dominion Government.
2. The formation of a new national voluntary association, partially financed by the Dominion Government (the National Council for Combating Venereal Diseases, now the Health League of Canada).
3. Subsidies to the provinces.

This plan was magnificent in its conception. For the first time in the history of Canada, health was recognized as a Dominion responsibility and as a national ideal. For the first time all of the provinces (ultimately they all came into the scheme) were united with the Dominion in a nation-wide effort to attack disease and to raise the physical standard of Canadians.

Immediately the provinces sprang into action. In place of a few scattered, struggling clinics well-manned and equipped clinics were developed at once in all the provinces.

Propaganda and education was undertaken on a large scale by the new national educational association. Supervision and co-ordination were achieved by means of the newly established division in the Dominion Department.

Shortly, as had been anticipated, the Dominion Government began to lose interest. Perhaps a lack of understanding on the part of our Dominion legislators was responsible; perhaps the fact that under the British North America Act the provinces pay the cost of the institutional care of the late results of syphilis and gonorrhoea and not the Dominion, had something to do with it. Why should the Dominion pay out good money to cut the expenses of the provinces and municipalities?

The venereal diseases, if not dealt with, may become serious, chronic, costly. The scheme immediately showed results, especially in a rapid fall in the incidence of syphilis in provincial institutions and large hospitals. This fact, however, did not appear to influence the Dominion Government and had it not been for the formation of the voluntary Committee on Health of the Senate and the House

of Commons in 1925, through the efforts of the voluntary association (at this time known as the Canadian Social Hygiene Council), the whole plan would have fallen to pieces in that year because of withdrawal of all Dominion grants. However, the scheme was rescued for the time being and continued intact until 1932.

In that year in spite of all efforts to the contrary all Dominion grants were withdrawn by the Government in power, the excuse being the advent of the depression. This meant that the Division of Venereal Diseases was done away with, and grants to the provinces then amounting to $100,000 annually and the annual grant of $20,000 to the voluntary association were cancelled.

After a lapse of two years the grant to the voluntary association (the Health League of Canada) was restored in part ($5,000.00) and under the present Administration an annual grant of $50,000.00 has been made to the provinces for the purchase of drugs.

Doing away with the Venereal Disease Division and the withdrawal of grants to the provinces had serious results.

The Division of Venereal Disease had been responsible in 1931 for calling regional conferences of clinicians in Edmonton, Montreal and Toronto, with the purposes of searching out weaknesses in the scheme as it then existed and making recommendations as to how they might be corrected.

The findings of these conferences were reported to the Dominion Health Council in 1932 and endorsed by that body, which appealed to the Government not to interfere with the scheme but on the other hand to take a greater interest in a serious national problem and to increase grants rather than reduce them. But all to no avail. All grants were cancelled and for a number of years venereal disease control for Canada as a continuing entity disappeared. At the present time it continues as a weak shadow of its former self.

During the last year the Health League of Canada has revived interest in the important resolutions passed by the conferences of clinicians and by the Dominion Health Council of 1932 by instituting an inquiry as to the extent to which these recommendations have been carried out. This was undertaken by means of a questionnaire sent out to the various provinces.

I propose now to comment on the results of this inquiry.

It should be obvious that in the absence of vigorous national leadership it is too much to expect that the many difficult problems involved in the control of venereal disease should be dealt with, with any degree of uniformity in the whole of Canada. The venereal disease grants to the provinces in themselves were an evidence of Dominion interest and leadership. Their withdrawal meant that projects which might have been undertaken were not undertaken. In any case where the solution of such problems is left to local initiative the results are almost certain to differ according to the initiative and interest of the individual or perhaps with varying local interest and existing machinery.

Following are some of the resolutions of the 1931 conferences with reports on action in the various provinces. These questions have to do with administration, with various procedures, and various methods of venereal disease control.

I shall discuss the resolutions as forwarded to the provinces in the order in which they were sent.

Resolution No. 1 is as follows:

1. BE IT RESOLVED that in view of the findings brought forward at this meeting that the blood Wassermann or Kahn is no criterion of the presence or absence of neuro-syphilis, and in view of the good results ensuing from early recognition and treatment of the condition, we recommend that a spinal fluid examination should be carried out in each case of syphilis. In primary and early secondary cases we recommend that the spinal tap be done at the end of intensive treatment and in all other cases AS SOON AS POSSIBLE AFTER THE FIRST EXAMINATION.

In only three provinces does there appear to be any attempt to press for the examination of the spinal fluid as suggested in the above resolution.

2. BE IT RESOLVED that Publication No. 23 be revised and brought up to date by its original authors or a selected committee thereof, and that copies be forwarded not only to all venereal disease clinicians, but to all practitioners in the Dominion, and that an arbitrary standard of cure for both diseases be formulated and included in said publication for the guidance of those general practitioners who are called upon, only occasionally, to treat these diseases.

Publication No. 23, "The Diagnosis and Treatment of Venereal Diseases", prepared by the Health League of Canada and printed and distributed by the Dominion Government, has been completely revised during the past year and is now ready for the printer.

3. BE IT RESOLVED that we recommend that every large clinic have a certain number of beds available for the accommodation of its gonorrhoea patients.

In most provinces these beds seem to be available.

4. BE IT RESOLVED that we are of the opinion that the teaching in our medical schools be improved and extended with regard to gonorrhoea, as an ever-increasing number of patients are turning up at genito-urinary clinics showing the effects of maltreatment of this disease.

While in the answers to this question improved teaching facilities are approved, it would seem from their general tenor that considerable more emphasis might well be placed on the question. An interesting observation from the British Columbia report reads as follows:

"Education of physicians—In 1939 the Provincial Board of Health made available to physicians eight part-time fellowships a year in the Vancouver Clinic. Each Fellowship lasts three months and carries with it satisfactory remuneration. Instruction in diagnosis, treatment and public health aspects of venereal disease is provided from the wide range of clinical material."

5. BE IT RESOLVED that the inclusion of specific questions in the subjects of gonorrhoea and syphilis in the annual examinations in medicine and surgery to the education of general practitioners going out to serve the public would be a distinct contribution in the campaign against venereal diseases.

In reply to this question various provinces reaffirm their approval of the idea but apparently little has been done about it in any province.

6. BE IT RESOLVED that similar facilities for the improved teaching of syphilis and research work in both syphilis and gonorrhoea be established and that special reference be made to dark-field examination.

The replies to this question include only one of interest, that from Ontario which states that research is carried on in clinics and the results forwarded to all clinic directors.

7. BE IT RESOLVED that with a view towards the encouragement of continuous attendance by venereal disease patients, great emphasis be placed upon the importance in educational value of the first interview between the clinician and the patient. This interview should be made the opportunity for full explanation of the disease, its communicability and dangers, and the need for continuous and faithful treatment for a specific period or periods. This would necessitate an increase in the number of clinicians at large clinics.

Some of the provinces have prepared pamphlets for use in this connection. Ontario to meet this situation has prepared an interview dealing with the venereal disease question and the patient's personal responsibility to himself and the community. This must be signed by the patient and the clinic director on the occasion of the first interview.

8. BE IT RESOLVED that we recommend that intensive venereal disease propaganda, by means of lectures, moving pictures, literature and public addresses, etc., be continued with a view to still further enlightening the public as to the extensive existence and the devastating effects of venereal diseases. Furthermore, we are of the opinion that concerted action is necessary, not only to lower the incidence, but even to control this public health menace.

The replies to this question show that intensive venereal disease propaganda is by no means general. Moving pictures are used in a few places. Some literature is available but it is not widely distributed. Most evidence of action is in Saskatchewan, British Columbia, Alberta and Ontario. Since the questionnaire was returned there has been considerable education in Quebec. The radio has been used only occasionally.

9. BE IT RESOLVED that there is no doubt about the usefulness of prophylactic treatment in lowering the incidence of venereal disease. We are of the opinion that the practice of administering early treatment should be instituted in all Canadian venereal disease clinics. To be practical this will necessitate keeping clinics open and adequately staffed, both early in the morning and late in the evening (8 A.M. to 12 P.M.).

BE IT RESOLVED that we agree that, with a view to making prophylactic treatment effective, appropriate posters should be prepared stating the hours during which the clinic is open for preventive treatment.

Nothing has been done anywhere in Canada with reference to the institution of prophylaxis or early treatment in the civil population.

10. BE IT RESOLVED that we go on record urging that remuneration be provided for physicians serving in venereal diseases clinics.

There seems to be some payment of physicians in all of the provinces.

11. BE IT RESOLVED that all venereal disease clinics should be equipped with dark-field apparatus, and that hospitals with venereal disease clinics not providing this service should be instructed to do so.

It would appear that dark-field equipment is generally available but there are some provinces which do not distribute capillary tubes for the collection of samples in areas distant from clinics.

12. BE IT RESOLVED that these conferences realize the difficulty involved in the effective treatment of indigents in rural areas suffering from venereal diseases, and there-

fore urge all Provincial Departments of Health to enter into financial arrangements with local authorities, in order that the continuous treatment of these cases may be assured.

In some provinces drugs are supplied free of charge. In Ontario the Provincial Department pays 75 per cent of the cost of treatment of indigents in rural areas and in those municipalities without clinic facilities.

13. BE IT RESOLVED that it is desirable that a meeting of the clinicians in each province be held once a year, possibly in conjunction with the annual meeting of the Provincial Medical Association, whereat besides other matters, latest methods and information be discussed and where possible demonstrated.

Further, that interprovincial meetings of venereal disease clinicians be held every three years.

In several provinces meetings of clinic directors are held occasionally. In no province have there been annual meetings of all interested clinicians nor have there been any interprovincial conferences of clinicians although such conferences were recommended in the 1931 conferences.

Additional questions had to do with the use of the Wassermann in prenatal clinics and premarital examinations.

It would appear from the replies received that where prenatal clinics exist the Wassermann is generally a routine. There is no indication of the extent to which this routine has been adopted in prenatal examination generally. There would appear to be considerable room for further progress in this direction.

With reference to premarital examinations, in Alberta, Saskatchewan, British Columbia and Ontario there has been some progress.

In Saskatchewan there is legislation requiring a Wassermann examination of both bride and groom.

In Ontario a Bill requiring premarital examination was introduced and withdrawn.

In British Columbia a Bill providing for premarital examination was passed by the Legislature in 1938 but has not yet been put into effect.

In Alberta an affidavit of health must be signed before a Commissioner of Oaths.

A supplementary questionnaire sent to the various provinces within the last two weeks adds little to the information summarized above.

Three provinces at least have adopted cerebrospinal-fluid examinations as a routine in all clinics.

The use of the Wassermann as a routine in hospital wards and in outdoor departments is increasing but as yet is not universal.

In connection with the discussion of routine Wassermanns in prenatal clinics British Columbia reports a recently modified Physician's Notice of Birth.

"You will note on this card a new question 'Was the mother's blood Kahn taken before the fifth month?' along with a comment vertically across the left-hand end of the card stating, 'A routine blood Kahn should be taken before the fifth month in every expectant mother. If positive, weekly treatment until term should be administered.' In all instances where the card is filled in 'No', the Division of Venereal Disease Control will write the physician and ask him the circumstances which prevented the blood Kahn being taken. Coincident with the adoption of this new 'Physician's Notice of Birth' an intensive lay edu-

cational effort among women's groups in the Province is to be instituted. This modification of 'Physician's Notice of Birth' recently approved by Ottawa should, we believe, be adopted by all provinces. It can do more than any other single factor to reduce the tragedy of prenatal syphilis and to draw to the attention of young married women the presence of syphilis which they have unwittingly acquired through marriage."

This suggestion is extremely timely and important.

British Columbia also expresses the opinion that Canada's greatest need in connection with venereal disease at present is a Division of Venereal Disease Control in the Department of Pensions and National Health at Ottawa which would guide and inspire a vigorous progressive campaign throughout Canada.

All of the provinces replying to the most recent questionnaire expressed approval of the application of the routine Wassermann test for recruits.

May I now express some opinions based partially on the survey findings.

In the first place it is very evident that the withdrawal of Dominion Government support to the Canadian venereal disease scheme in 1932 definitely retarded progress in Canada, and that at that time and for several years afterwards we lost ground which it is hard to regain.

The value of Dominion leadership had been demonstrated and at the end of ten years of Federal leadership Canada probably had a coordinated program than which there was none finer in the world. The principles adopted in the Canadian scheme have since been adopted in the American scheme. In the United States there is a strong Division of Venereal Disease control in Washington; we once had a division and we should fight for its reestablishment.

Grants from the Federal Treasury to individual States are made under the United States scheme as grants to the provinces were made under the Dominion scheme but the grants in the United States are much larger in proportion than ours ever were. Under the LaFollette-Bulwinkle Bill $6,500,000 is the Federal venereal disease grant this year, largely for distribution to State Departments of Health. Our present total Dominion grants for this purpose are $50,000. In other words, the United States with ten times our population spends one hundred and thirty times as much money out of the Federal Treasury.

One wonders what is the matter with our legislators at Ottawa that they fail to realize the national significance of a problem, the seriousness of which is so readily realized by our neighbours to the south of us.

I suggest that the failure of the Dominion Government to take a real interest not only in this problem but in other health problems which, undealt with, mean unnecessary and expensive illness cannot be attributed to the British North America Act. That is only an excuse. The Federal authorities in the United States spend Federal funds on health in spite of the fact that constitutional limitations of the Federal authorities in the United States are much more marked than are those of our Dominion authorities.

In the British North America Act, as a matter of fact, health is not mentioned and residual powers rest with the Dominion. In the United States residual powers rest not with the central authority but with the states.

The reason, then, for lack of interest on the part of the Dominion authorities

must be sought somewhere else. Is it not logical to call attention to the fact that the cost of the institutional care of illness is borne not by the Dominion but by the provinces? Ontario estimates, for example, that the institutional care of general paralysis of the insane costs that province no less than $1,000,000 per year and the other provinces probably pay proportionately. Were this a Dominion expense it would probably not take long for the Dominion to decide to spend some money on the eradication of a scourge which is a danger to every Canadian.

But this lack of interest on the part of the Dominion has other serious results.

There has been considerable discussion as to the application of the routine Wassermann in recruits and considerable speculation as to why it was not adopted immediately on the outbreak of war. Again as compared with the United States we are miles behind. In a recent communication from Dr. Thomas A. Parran, Surgeon General of the United States Public Health Service, I learn that it is being used in connection with the physical examination of the 16,500,000 men called up under the selective draft. In Canada we are told that there is no reason for applying such a test in the army when it is not used in the civil population.

The answer is that if it is not applied many soldiers will eventually develop disabilities which will unfit them to be soldiers. These and many others after the war will develop disabilities which will render them a burden to the taxpayers of Canada. And it does not matter much whether the taxpayer pays his money to the Provincial Treasury or the Dominion Treasury. The point is that he will pay taxes which he should never be compelled to pay.

The suggestion that it is a hardship for a soldier or anyone else to be submitted to a scientific test for the detection of a serious disease is of course ridiculous. If those of us in the public health field had their way the application of the Wassermann test would be universal. Syphilis detected and eliminated would solve one of our most serious national and public health problems. Industry, commerce, the home, youth, old age and the nation would all benefit.

Of course the Wassermann test as a routine should be utilized in the army!

But there are other problems which grow out of the venereal disease problem.

Of recent years certain spectacular discoveries have been made in the treatment of both gonorrhoea and syphilis. The development of sulphanilamide, dagenan and sulfathiazol has robbed gonorrhoea of much of its terrors, both dagenan and sulfathiazol curing most cases of gonorrhoea in little over a week. Serious complications are in most cases avoided altogether. Soon with adequate public health machinery our statistics as to the seriousness of gonorrhoea will be entirely changed, and gonorrhoea may well become a disease which is not a major cause of disability. Similarly syphilis, formerly "Captain of the men of death", is now under attack by means of new weapons. Massive therapy by means of which arsenicals are used in dosage previously supposed to be impossible has achieved spectacular results. While the drip method as utilized in

Mt. Sinai Hospital and its modification is still considered to be experimental, its remarkable success in early cases augurs well for the future.

Are we then on the way to the total elimination of venereal disease? Perhaps, if we continue to build our public health machinery and to cultivate a healthy public attitude towards the problems of health conservation.

The prospect is so startling as to invite conjectures on the possible results. The suggestion is made that as the venereal diseases become less dangerous there will be more exposures.

It is interesting to note that in questionnaires sent to the provinces there was not evidence of any attempt by any province to institute prophylaxis. We know that the prophylactic packet—or early treatment of an exposed person, will prevent venereal disease in the individual case. Why then has this procedure not been adopted in the civil population? The answer one generally receives is public opinion. One inquires whether public opinion here is on sound ground. I think that on the whole the answer is "yes" and that the control of venereal disease by such means should be approached with caution. I suggest that the controversy in Great Britain some years ago as to the moral dangers of the prophylactic packet as opposed to early treatment was justified. There is no justification for withholding treatment from a person who has been exposed even if he has no symptoms. To hand a person a prophylactic packet or preventive on the assumption that he may be exposed is quite another matter. It may be that in the army where all sorts and conditions of men are gathered together there are men of such moral character that the use of the prophylactic packet is, if not desirable, excusable. If such means are used, objectionable as their use seems to me, the distribution of these preventives should be undertaken with the greatest discretion and I am not sure that this is possible. I must confess to a feeling of loathing to the whole idea.

Some public health authorities suggest that there is no moral aspect to the venereal disease problem or, if there is, it is the business of the churches. With this attitude I take sharp issue. If we are to control venereal disease by chemical means alone and by so doing damage the moral fibre of our people then our last stage will be worse than our first and we may well emerge without even physical health, without religion and as close to paganism as is Germany because without morality, religion goes also.

Walter Lippmann in his book "The Preface to Morals" makes the statement that people fail to realize that in the discovery of effective contraception we have made the most startling discovery in the history of civilization—that well-meaning people fail to realize that with the publicizing of these methods it becomes impossible to limit their application to the type of person we desire to use them. In other words, Mr. Lippmann suggests that the widespread use of contraceptives will change our attitude towards sex morality. It is significant that during the present century with an increased use of contraceptives illegitimacy has not decreased, as might be expected, but has increased.

One could pursue this argument in connection with the use of all methods of a preventive character of this type, including prophylaxis and even effective

medical treatment. Where illicit exposure does not seem to be dangerous it is likely to increase and so not only may morality deteriorate but disease itself may finally increase and become a more serious problem than ever.

My argument is that moral teaching and the improvement of social conditions should not be neglected in our attempt to control venereal disease by medical means. It may be argued that the presentation of this point of view is of philosophical and abstract significance only and of no practical and immediate importance. Nevertheless it is an aspect of the subject which should be borne in mind when one considers the long-range view and ultimate objectives which should include both the moral and physical welfare of our people.

The immediate objectives are so obvious that perhaps they need little emphasis here.

Early diagnosis and treatment of all cases is essential, as is continuous treatment.

Each venereal case has its origin in another infected individual. The tracing of sources of infection as well as the discovery of social conditions surrounding infection may be achieved by the careful use of the social case sheet elaborated during the last war and since adapted by many departments of health. We now have adequate legislation which makes it possible to deal with all such sources when they are found.

May I pause here to congratulate the Province of Quebec on the fact that satisfactory legislation for the control of venereal disease was enacted at the last session of the Provincial Legislature.

The importance of tracing contacts is obvious. This is of course essential in all programs of venereal disease control.

Marital syphilis is of great importance and syphilis in parent or child should generally mean the examination of the whole family.

The question of environmental conditions which increase the opportunities for contact with infected persons is one which must not be neglected. Although it may at first glance seem to be a social or law enforcement problem apart from the duties of a department of health, nevertheless the rigid repression of prostitution is essential if venereal diseases are to be stamped out. If this is not the immediate duty of departments of health, its relationship to the spread of venereal disease should be recognized and steps taken to stimulate action by the proper authorities.

The problem of the street-walker is difficult. It may require special methods or even special legislation.

The education of the public by all means at our disposal should be continued and increased.

The problem of venereal disease in general is a problem which affects all parts of the country and which requires planning on a nation-wide scale if it is to be solved. I suggest here again that the withdrawal of Dominion grants to the provinces for venereal disease control in 1932 was a body blow not only at our Canadian venereal disease program but at the whole public health program of Canada. Our failure to control the venereal diseases as they should be controlled

throughout Canada and are not controlled, despite some success, is on the whole the result of the failure of Dominion leadership in health matters. It is ridiculous that we fail to pasteurize all of our milk instead of some, when we know that pasteurization will save life and health. Instead of a pasteurization law in one province we should pasteurize ALL of our milk in all of the provinces. Instead of controlling diphtheria in one area and allowing it to run rampant in another, we should aim to eliminate this dread disease from Canada altogether. And so with venereal disease. These diseases should be attacked by every means at our disposal in all parts of Canada at once. Only by united action can these dangerous, costly maladies be eliminated. I am afraid, however, that this cannot be achieved until our people throughout the Dominion are convinced that the whole matter of the prevention of illness is a matter of national importance and of vital significance now during the war. This requires concentration on an educational program directed at the public for some time and I think that to this task we should bend our energies.

Again I urge of you that we cease thinking of health as a parochial matter. National health should be our objective. Only as we fight together on a united front will we achieve our great ideal: health for all Canadians and hence a great Canada.

A Health Survey of Rural Manitoba Youth*

CECIL G. SHEPS, M.D.
Winnipeg

IN 1937 a youth-training program was introduced in Canada through the cooperation of the Dominion and Provincial Governments as part of the effort made to meet problems associated with unemployment arising out of the economic conditions of the depression years. During the year 1937-38 home-making schools for girls and agricultural centres for boys were conducted in Manitoba. The program was enlarged in 1938-39, providing more centres and giving instruction in additional subjects. Health instruction was given a definite place in the curriculum, amounting to five hours of teaching in the boys' schools and twenty hours in the girls' schools.

The health program was arranged by the Manitoba Department of Health and Public Welfare and included the conducting of tuberculin tests and the obtaining of blood samples for Wassermann tests. In the summer of 1939 a youth-leadership camp was established at Gimli under the auspices of the Department of Education of Manitoba. Its purpose was to train young people so that they might go back to their own communities and establish community youth centres. Physical training constituted the main part of the program but the subject of health was included in the citizenship course. At the request of the young people, the Department of Health arranged for this health program. Each of the young people received a complete physical examination before being allowed to undertake strenuous physical training. Students in home-making schools and agricultural centres were also given an opportunity to have a physical examination. Dr. E. Elizabeth McKim and the writer were appointed for this work and Dr. Maxwell Bowman and Dr. A. Marguerite Swan of the Department of Health also conducted physical examinations for centres close to Winnipeg.

This report relates to the work done during the year 1939-40.

Method

Each person enrolling filled out a card which gave a record of his complete medical history. Then a complete physical examination was done by one of the doctors who carried out this work. Wassermann and tuberculin tests were performed. Arrangements were made for the X-ray examination of those who had positive tuberculin reactions. When the Wassermann test was positive, arrangements were made for treatment by the patient's doctor. Any defects or abnormalities that were discovered in the course of the physical examination were noted, and those affected were sent letters about these conditions and urged to see their doctor in order to obtain his advice and have treatment. If the condition was anything out of the ordinary, a letter was sent to the local doctor in each case explaining why the patient was referred.

**An abstract of a more detailed report.*

A total of 3,146 young people were examined in this way. They came from various youth-training centres, as follows: community youth centres, 50; home-making schools, 21; agricultural schools, 15; and vocational schools, 2—a total of 88. It is felt that this is a fair sampling of rural Manitoba youth. All sections of the province were visited and there was thus obtained a cross-section from the social and the economic point of view.

Ages of People Examined

Those examined were between the ages of 13 and 30. The age and sex distribution of this group is as follows:

	Ages																		
	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Female—	2	2	26	281	288	247	201	134	121	89	61	55	40	35	34	27	14	15	1,672
Male —	—	3	27	223	208	216	159	151	103	87	68	57	55	38	32	24	17	6	1,474
Total —	2	5	53	504	496	463	360	285	224	176	129	112	95	73	66	51	31	21	3,146

It will be seen that the excess of 198 females over males consists mainly of girls between the ages of 15 to 19. The number of people examined in each youth-training centre varied from 15 to 100, the average number per group being 35.

Previous History

Unfortunately the form used to elicit previous history did not make it possible for us to obtain a satisfactory history. The individual was asked to tick off on a list whether or not he had suffered from a number of conditions. The terms used in this list were, generally speaking, not specific enough to render the information obtained very reliable. It was of interest that 282 (8 per cent) had had an appendectomy performed; 937 (29 per cent) tonsillectomy; and 31 a herniotomy. Of communicable diseases, 452 (14 per cent) recorded a history of scarlet fever; 115 (4 per cent) diphtheria; and 14 typhoid fever.

Smallpox Vaccination

Smallpox vaccination marks were found on 2,285 people. This group constituted 72.6 per cent of the total. While 72.6 per cent is the average vaccination rate, a study of the vaccination figures, when arranged by geographical centres, shows a marked variation. Of the 67 geographical groups, 11 centres showed a vaccination rate of 90 per cent and over; 17 centres, 80-90 per cent; 20 centres, 65-80 per cent; 12 centres, 50-65 per cent; and 7 centres, less than 50 per cent.

This variation in the vaccination rate, even in neighbouring towns, leads one to conclude that the explanation lies in local circumstances and conditions. It seems that one of the most important of the local circumstances is the attitude of the local doctor towards immunization and public health measures in general.

Diphtheria Immunization

On the examination form was the question: "Have you had three doses of diphtheria toxoid?" Fifteen hundred and thirteen said yes, giving a percentage

of 48.9 immunized against diphtheria. Of the 67 centres, 2 had a percentage of 80 and over immunized against diphtheria; 15 centres, 65-80 per cent; 18 centres, 50-65 per cent; and 32 centres, less than 50 per cent.

Weight

Cases were designated as underweight or overweight if there was a variation of more than 10 per cent from the normal weight for that age. Nine per cent were underweight, with males and females about equal. Less than 2 per cent were overweight.

Eyes

The examination form included questions with regard to the wearing of glasses and, if glasses were worn, whether these were worn for all purposes or for reading only. The information obtained is tabulated as follows:

	Number	Percentage
Without glasses	2,263	71.9
No information	319	10.1
Glasses for reading only	139	4.4
Glasses for all purposes	386	12.2
Wears glasses—no further information	39	1.0
Total wearing glasses	564	17.9

It seems reasonable to assume that the group of 10 per cent who did not reply to the question did not wear glasses. This would bring the number of those who do not wear glasses to 2,582, or 82 per cent.

Vision

Vision was tested by the use of Snellen's Chart. Those who wore glasses were tested wearing them. Every case that had less than 20/20 was listed as having defective vision.

	Number
Without glasses	2,582
Defective vision	772 (29%)
With glasses	564
Defective vision with glasses	214 (37%)

It will be seen, therefore, that a significant proportion of those who do not wear glasses had defective vision and required attention to this problem, and also that an equally significant proportion of those who wear glasses were not getting full correction.

Ears

During the course of the examination the individual's hearing was tested with the aid of a watch. The discovery of a defect in hearing by this method was followed by a further examination. The history of otitis media or otorrhea was also followed by a closer examination.

Hearing fair	34
Hearing poor	31
Chronic bilaterial otorrhea	1
Perforated ear drum	1
Scarred ear drum	1

Teeth

During the examination of the throat, the teeth were also inspected. Mouth mirrors were not used for this purpose. Wherever obvious dental sepsis or decay was seen, the case was classed as "tooth decay". Of the total group examined there were 664 in this class—i.e. 21.1 per cent.

Skin

On examination, 22 per cent of the males (331) and 23 per cent of the females (405) were found to suffer from acne.

Nose

Nasal pathology requiring attention was present in 4.8 per cent. The commoner conditions responsible were nasal obstruction and sinusitis.

Tonsils

Forty per cent either had had a tonsillectomy or required one. Those requiring the tonsillectomy formed 10 per cent of the entire group examined. Of those who had had a tonsillectomy performed, there was a recurrence of tonsillar tissue in 2 per cent.

Chest

Physical examination of the chests of 3,142 individuals disclosed the following findings: flat-chested, 46; pigeon-chested, 19; other rachitic types, 37.

Cardiovascular System

The findings concerning the cardiovascular system are as follows:

	Males	Females
Number examined	1,474	1,672
Irregular rhythm—extra systoles	1	2
Functional murmurs	14	58
Organic murmurs	8	7
Displaced apex—to palpation and percussion	5	1
High blood pressure	30	11

It would seem that in a number of these cases, the elevation of blood pressure, in spite of the rest which each individual was given, was due to the excitement of the occasion. In every one of these cases the individual was referred to his own doctor for further examination.

Lungs

Examination was performed using the usual procedures of inspection, palpation, percussion and auscaltation. Of a total of 3,142 males and females, 3 had impaired resonance and 22 had adventitious sounds (rales, rhonchi, etc.).

Abdomen

It was difficult to arrive at conclusive findings due to the fact that individuals were examined only once and were referred to their personal physician for further study wherever indicated.

Hernia

Among the 3,142 examined, hernia was present in 28 (of which 20 were inguinal in males and 2 in females) and herniotomy had been performed in 31, making a total incidence of 59 (1.8 per cent).

Feet

Flat feet were found in 5.6 per cent of the entire group. The condition was found in 2 per cent of the males examined and was five times as common among females. The foot deformities which have a functional background, such as flat feet, hallux valgus, corns, etc., were much more common among females.

Tuberculin Tests

The information was elicited that 337 individuals had previously had the tuberculin test. This group constitutes 10.7 per cent of the total.

In all cases where the previous test had been positive it was not repeated. Where it had been negative, it was done again.

	Pos.	Neg.	Not Done	No Report	Refused	Doubtful	No. of Tests Done
Males	368	1,052	29	26	—	1	1,447
Females	467	1,153	31	13	2	4	1,637
	835	2,205	60	39	2	5	3,084

Males: Positive test—25.4 per cent.
Females: Positive test—28.5 per cent.

In the entire group the percentage of positive reactors was 27.07 per cent.

X-ray Examination of Chest

Arrangements were made to have chest X-rays taken of all tuberculin reactors. This work was not completed when the report was published but when the travelling clinics have completed their work this summer, it is expected that all the members of this group will have been examined. The following is a report of those X-rayed thus far:

	Chest plates clear	Chest plates not clear
Males	186	6
Females	304	11
Total	490	17

Of the males whose chest plates were not clear, one case of minimal active tuberculosis was admitted to Ninette Sanatorium for treatment. Four cases with suspicious-looking X-rays are being replated at short intervals. One case has been recommended for admission to sanatorium to determine whether the disease which is evident in the X-ray is active or arrested.

Of the females whose plates were not clear, two cases of bilaterial apical tuberculosis are under treatment in sanatorium. Nine cases with suspicious-looking X-rays are being replated at short intervals.

It must be remembered that the figures quoted above are on the basis of roughly 60.7 per cent of the positive tuberculin reactors and that there are still 328 persons to be X-rayed.

The X-ray findings of the rest of the tuberculin reactors, who were examined

by the travelling clinics, have not yet been correlated. On the basis of the above findings, however, one may estimate that out of the whole sample of youth 0.8 per cent have X-ray plates which are not clear and require further observation, and 0.20 per cent have tuberculosis of the lungs requiring sanatorium care. So far as we know, there were no Indians in this group.

Wassermann Tests

Of 3,121 tests performed, 4 (1 male and 3 female) were positive and 2 were doubtful and will be repeated. Those suffering from syphilis had no idea that this was the case. One was in the midst of a secondary syphilitic rash and was under treatment by her doctor for dermatitis. Because the health examination, including the Wassermann test, was optional, it is conceivable that a number of people who suspected that they had syphilis did not come to be examined. Therefore, we are not justified in concluding that our sampling, with regard to the incidence of syphilis, is an accurate one.

Classification

Everyone was graded according to the extent and type of physical training in which they could take part. Ninety-four point nine per cent were allowed to take all forms of athletics.

Conclusions

The sample of youth which was examined in this study is quite a balanced one for rural Manitoba. All sections of the province were visited and thus a cross-section was obtained from the economic and social points of view. The various nationalities in Manitoba also were well represented. The number examined, 3,146, is large enough to warrant the assumption that this study presents a fairly accurate picture of the health status of rural Manitoba youth.

Immunization: Twenty-seven per cent had never been vaccinated. There was a great variation in the extent of vaccination, ranging from over 90 per cent to less than 50 per cent in different centres. Fifty-one per cent had not been immunized against diphtheria.

Dental Care: Dental care is far from adequate. There was gross and obvious tooth decay in 21.1 per cent of the group.

Eyesight: Forty-two per cent either wear glasses or ought to wear them; that is, this proportion has defective vision. Thirty-seven per cent of those who wore glasses were not getting complete correction.

Feet: Flat feet were found in 2 per cent of the males and the condition was five times as common among the females.

Nutrition: Nine per cent were underweight. Deformities of the chest such as flat chest, and many rachitic types, were found in 3 per cent. These were twice as common among males as among females. This would indicate an unexpectedly high incidence of rickets because these are only the cases in which there were residual deformities.

Tuberculosis: Twenty-seven point seven per cent reacted positively to the tuberculin test. There was no significant variation between the male and the female groups. On the basis of the X-ray films of half the positive reactors it may be estimated that of the whole sample 1 per cent have X-ray films which are not clear and require further observation and 0.25 per cent have tuberculosis of the lungs requiring sanatorium care.

Syphilis: Four cases of syphilis were discovered in individuals who were not aware that they had this disease—an incidence of 0.1 per cent. This finding is, of course, subject to the limitations described above.

On the basis of our findings it is estimated that 70 per cent of the individuals examined had one or more remediable defects or conditions for which they required medical advice.

The Value of Food Inspection and Properly Trained Food Inspectors*

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GOOD health is based upon good nutrition and good nutrition depends upon an adequate and varied diet. This diet preferably contains foods of both animal and vegetable origin in order to provide quantity and quality of each essential dietary constituent. In some rural areas it may still be possible for the individual to produce most of his own food requirement, in which case he has no particular food control problem except cleanliness because clean, fresh food is usually safe food. The necessity for food control is largely a problem brought about by the congestion of population in urban centres under conditions which make it impossible for the individual family to produce their own food supply. Food must necessarily be brought into these districts and modern methods of refrigerated transportation make it possible to transport food products hundreds or thousands of miles without appreciable deterioration. This provides variety of diet otherwise not obtainable and supplies sub-tropical fruits and vegetables and other perishable products to the larger municipalities throughout most seasons of the year. Commercial interests have invested large sums of money in providing transportation and storage facilities and food-processing plants, and the larger companies exercise every precaution to provide the public with clean, safe food of good quality to protect their investment, if for no other reason.

Control over the quality of food products sold throughout the Dominion of Canada is primarily a function of the Federal Department of Health, which is responsible for enforcing the provisions of the Food Act, while Government meat inspection is conducted under the authority of the Health of Animals Branch of the Dominion Department of Agriculture. Municipal food inspection is entrusted to the medical officer of health, and in turn to the sanitary inspector, under authority of the Public Health Act of the Province of Ontario.

The close relationship between health and nutrition has necessitated an official food inspection service to ensure a clean, safe and wholesome public food supply. During recent years the conception of the duties of the food inspector have undergone a great and important change. Whereas formerly his activity was largely devoted to the search for adulterated, spoiled and unwholesome food and prosecution of the dealer, the intelligent food inspector of today seeks to cooperate with the dealer to insure the marketing of safe foods of high quality. This requires that the inspector knows at least as much as the dealer himself

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with regard to the specific foods concerned, and preferably much more, so that the inspector may suggest the changes in handling or processing which are required to make the food product satisfactory. A reasonable and cooperative attitude on the part of the inspector is the first step in obtaining the active cooperation of the dealer. I do not mean to infer that the police power which was formerly the inspector's chief weapon can be entirely discarded. There will always be ignorant, unscrupulous and non-cooperative food dealers and the public must be protected from adulterated, filthy, decomposed or infected food products by whatever means may be necessary. Adequate inspection should ensure that the Pure Food laws and municipal regulations are being observed and the inspector must be sufficiently familiar with the legal requirements to know what infractions to look for and how to correct and prevent them. It is the joint responsibility of the producer, the dealer and the inspector to see that the food offered to the public should not present a health hazard whether from the viewpoint of containing disease-producing organisms or from any other of the various ways in which food may be harmful to health.

Our foods may be roughly classified as belonging to the animal or the vegetable kingdom and each type of food offers its own special problems. Ordinarily we are inclined to think of animal foods as being more dangerous than vegetable and consider milk and meat as the most important and most dangerous of the foods of animal origin.

Meat for food purposes should be obtained from healthy animals; but for practical purposes, where infection is localized, parts of the carcass only may be condemned as unfit and the remainder passed as satisfactory and in fact may make an entirely acceptable food product. Where ante-mortem and post-mortem inspection is carried out by the Dominion Government meat inspectors we may be assured of the satisfactory quality of our meat supply because these inspectors are thoroughly trained in that service. All meat for export must be inspected and approved by Government inspectors but much meat for home consumption is slaughtered locally without any official inspection and it is meat of this character which constitutes a problem for the municipal food inspector. Inspection of dressed meat is an entirely different proposition from that of inspecting the same meat at time of slaughter when all of the glands and organs of the animal are available for inspection.

When one considers that there are forty or more different diseases or causes for which carcasses or parts of carcasses should be condemned, it is readily understood that a little knowledge may prove very misleading and that the veterinary surgeon only has the fundamental training essential to the satisfactory conduct of the important duty of meat inspection.

If public health authorities could convince the general public that the only absolutely safe fresh meat is meat which is cooked sufficiently to destroy animal and vegetable parasites, then the question of meat would present comparatively little difficulty but many people insist upon meat which is so rare that it is practically raw, in which case the question of meat inspection is all important. Rare or raw meat may contain tapeworm cysts which in light infestations might

escape observation. This is not so serious in the case of beef because the beef tapeworm attaches itself to the intestinal wall by suckers but the pork and fish tapeworms are equipped with hooklets to attach themselves to the intestine, leaving bleeding points when they move and grasp new points of attachment which eventually results in a greater or lesser degree of anemia, and the cystic stage of the pork tapeworm may occur in man with serious or even fatal issue. Another parasitic infection of meat, trichinous pork, is especially important not only because it is comparatively common but because the condition is incurable once the larvae are embedded in muscle. In a disease like trichinosis, where competent inspectors may often fail to discover the minute encysted larvae, what chance would the untrained food inspector have?

The meat inspector should be familiar with the gross anatomy of animals whose flesh is commonly used for food and must be familiar with the location and appearance of the lesions resulting from animal infections or diseases which may make the flesh unfit for human consumption. He should be able to spot macroscopically in dressed meat the absence of tissues that ordinarily are not trimmed, indicating perhaps the removal by the butcher of evidence of unwholesomeness. Inspection should extend to prepared meat products which must be made of sound edible materials with a minimum of handling and sufficient processing to destroy animal or vegetable parasites. The feeble disinfecting properties and the inability of wood smoke to penetrate deeply in smoked meat mixtures must be appreciated.

Every inspector knows that avian tuberculosis is common in poultry and that the tubercles are apparently localized in the spleen, liver or intestines while the muscle appears normal. It would seem logical to reject the infected organs and pass the remainder for food as is done with localized tuberculosis in meat. Poultry, however, presents an entirely different problem: the absence of lymph nodes in the chicken allows the tubercle bacilli to pass directly from the lymphatics into the general circulation so that the organism can be cultured from tissues which appear normal. While the avian tubercle bacillus has a low pathogenicity for man and the organism can be destroyed by thorough cooking it is safer with tuberculous fowl to reject the entire carcass.

A working knowledge of bacteriology and animal parasitology is essential to competent meat inspection.

Another food of animal origin which constitutes a definite problem for the food inspector is the public milk supply. It is not enough to say that pasteurization will make milk safe; the public is entitled to good, clean, fresh and safe milk. One of the primary requisites for a satisfactory milk supply is healthy cows. Physical appearance cannot be depended upon to assure healthy animals; they should be tuberculin tested and blood tested; and while it may be contended that the food inspector is not required to perform these tests he must at least be able to interpret intelligently such tests and enforce precautions to protect the herd and to protect the milk supply. He should be able to make field tests to determine the presence of clinical (or sub-clinical) mastitis, advise with regard to the segregation of infected cattle and practically assume responsibility for the

return of such cattle to the milk line. The inspector must have sufficient knowledge of sanitation to advise corrections in the technique of milk production and handling to ensure clean and safe milk. High bacterial counts, abnormal colour, odour, flavour or texture may be harmful or may be harmless, yet each should suggest a probable cause and method of correction. This requires familiarity with modern laboratory procedures for the examination of milk and ability to interpret the laboratory results. The limitations of the sediment test, bacterial counts, *B. coli* counts, leucocyte counts, chloride and lactose estimations, the methylene blue test, the resazurin test, the brom-thymol blue test, and many others must be recognized in order that fair interpretations may be drawn. Adequate milk inspection today consists of far more than the police power which enables the inspector to exclude an unsatisfactory product from the market. The competent inspector is the "trouble shooter" who when difficulties arise visits the dairy or processing plant, observes the technique, collects appropriate samples for laboratory examination and advises where the fault lies and how it may be corrected.

Milk products form an important part of our diet and may be dangerous if made from raw milk. Pathogens such as the tubercle bacillus, the typhoid bacillus, brucella abortus, streptococci and staphylococci can live for considerable periods in butter, cheese, ice-cream and similar milk products. Some of these products, particularly frozen desserts, are also subject to contamination through insanitary methods of handling. Contrary to popular opinion, most pathogenic bacteria can withstand freezing and the food inspector must educate both the dealer and the public with regard to the necessity for pasteurization and sanitary handling of these products.

Everywhere and at all times the problem of living micro-organisms or products of their metabolism in relation to food products must be borne in mind by the food inspector. Organisms which may be disease-producing or harmful to quality gain access to foods in various ways: contamination of the raw product at its source, contamination by handling or contact with spoiled food, and contamination during processing; or it may become harmful to health by the addition of poisonous chemicals as insecticides or preservatives. Contamination of fruit, vegetables or shellfish in their natural environment, flesh foods smeared with intestinal content of animals at time of slaughter, contamination of prepared meat mixtures and other foods by handling or indirectly by exposure to insects or vermin, spoilage due to insufficient sterilization and the modern widespread use of arsenical sprays for fruits and vegetables are only a few examples.

Modern civilization demands some method of preservation of food products during periods of abundance for use during periods of scarcity. For many foods cold storage provides a satisfactory method, adding nothing or taking nothing away from the stored food. Some foods are safer after a period of storage, and the larvae of some of the animal parasites in meat will be destroyed, but that is not true for all animal parasites. On the other hand, the vegetable parasites or bacteria may actually multiply under conditions of cold storage. The food

inspector must know the probable effect of cold storage upon each different type of food in order to determine its wholesomeness.

Inspection should ensure sanitation of all places where food is prepared for sale, proper handling, adequate refrigeration and protection from dust, insects and vermin. Special attention must be paid to methods used in the manufacture of soft drinks, raw fruit and vegetable juices, frozen desserts, as well as the equipment, dish-washing facilities and general sanitation of restaurants and other eating places where these and other articles of food and drink are dispensed.

The mass of scientific knowledge which has accumulated during the present century with regard to measures for the promotion of health and the prevention of disease is so great that no one individual can hope to assimiliate the details of every division of the subject. For that reason the modern health department must contain within its personnel certain individuals with expert knowledge in specialized lines of public health endeavour. Staff efficiency depends upon the knowledge and training possessed by each of its individual members in their specialized fields and upon cooperation and coordination of effort. The medical officer is the executive officer of the Health Department and his specialized medical and public health training adapt him to supervise and coordinate the work of his department. His own intensive training and probably his inclination is toward the medical aspects of disease prevention and control, yet he must be familiar with the broader aspects of all useful public health activity.

There are of necessity many details of laboratory and inspection routine where the medical officer must accept and act upon the decisions of his subordinates. Here again the responsibility for the final decision must rest with the medical officer and it therefore behooves him to choose a personnel in whose knowledge and ability he may place implicit confidence.

Food inspection in all of its ramifications is today an extremely important subdivision of health department work requiring a specialized training in a much wider field than that of sanitation alone. Because so many food problems are bacteriological in character, I would especially stress the value of a working knowledge of pathogenic bacteriology which frequently enables the inspector to correct faulty technique by simple observation.

I see the food inspector of the future as the liaison officer between the producer, retailer and general public on the one hand and the medical officer on the other, much the same as the public health nurse occupies a similar position between the general public and the medical officer of health in her field of activity, all working toward the promotion of health and the prevention of disease.

Good health is dependent upon good nutrition, good nutrition is dependent upon safe food, safe food under modern conditions of civilization is dependent upon adequate food inspection. Man's whole problem so far as nutrition is concerned is to eat other things and prevent other things from eating him, and in the final analysis he is eaten. The task of the food inspector is to help delay as long as possible that final and inevitable dissolution.

Errors in the Calculation of the Nutritive Value of Food Intake

I. Comparison of Calculated and Determined Amounts of Calories, Protein and Fat

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CALCULATION of the nutritive value of foods using tables of food composition, is a commonly used procedure in hospitals and in private medical practice for the control of special diets and in nutritional surveys for the determination of the adequacy of the food supply. For example, in the reports of surveys recently published in this JOURNAL (1) it was noted that records of the weights of all food consumed by the observed persons were kept. Using a set of tables of food composition issued by the Canadian Council on Nutrition, calculations were made of the nutritive value of the consumed food in terms of calories, protein, fat, etc. These values were then compared with a dietary standard and the degree of adequacy of the food intake was assessed. Obviously, it is of importance to determine possible sources of error, if significance is to be attached to the final evaluation.

Most tables of food composition give average figures for a few analyses of a particular food; in very few cases only, minimal and maximal figures are stated. Considerable discrepancies are found between different tables. It is questionable whether the composition in the best set of tables approximates the actual composition of the food eaten by a given family. It is known that the mineral content of vegetables is dependent upon the minerals contained in the soil. For these reasons it can be said that the only accurate method of determining the nutritive value of a diet is to analyse samples from the food in that particular supply. If a considerable number of diets is to be studied the amount of work involved renders such a procedure clearly impossible. Since comparatively few references have been found to investigations of possible errors in calculations of this type it seemed advantageous to carry out such studies. Gutman and Low (2) have compared calculated with determined values of the calcium content of human dietaries. They reported that calculated estimations exceeded values found by analysis and that the average discrepancy was 25 per cent.

This paper reports calculated and analytically determined values for calories, protein and fat for a series of twenty meals. These were lunches served in the Connaught Laboratories with a different menu each day and thus containing a wide variety of foods. Servings of food were taken each day and weighed on diabetic scales, following the same procedure as that used in dietary surveys conducted by the Canadian Council on Nutrition. The total food collected from each lunch was thoroughly minced and mixed as uniformly as possible. Aliquots

TABLE I

COMPARISON OF CALCULATED AND ANALYTICALLY DETERMINED NUTRITIVE VALUE

CALORIES			PROTEIN			FAT		
Determined Value	Calculated Value	Per cent Difference	Determined Value	Calculated Value	Per cent Difference	Determined Value	Calculated Value	Per cent Difference
253	259	+ 2.4	10.0	6.4	−36.0	8.6	8.2	− 5.8
452	402	−11.1	13.3	16.8	+26.3	20.5	19.6	−43.9
473	444	− 6.1	28.8	23.7	−17.7	16.6	19.8	+19.3
328	290	−11.6	11.2	12.2	+ 9.0	15.3	10.7	−30.1
389	354	− 9.0	12.4	11.4	− 8.1	15.1	19.7	+30.4
273	269	− 1.5	9.2	9.6	+ 4.3	12.5	11.7	− 6.4
418	363	−13.2	16.1	13.7	−14.9	20.0	17.4	−13.0
316	360	+13.9	13.0	13.3	+23.1	19.2	16.5	−14.1
440	444	+ 0.9	19.9	18.1	− 9.0	21.8	22.3	+ 2.3
395	382	− 3.3	14.5	12.9	−11.0	19.6	19.4	− 1.0
492	479	− 2.6	27.2	32.6	+19.9	14.7	17.2	+17.0
644	571	−11.3	32.1	24.4	−23.9	24.3	31.2	+28.4
496	541	+ 9.1	19.9	20.5	+ 3.0	19.0	28.3	+48.9
436	436	0	16.0	19.5	+21.9	14.2	20.3	+43.0
512	588	+14.8	15.6	17.1	+ 9.6	16.9	32.5	+92.3
412	483	+17.2	15.5	14.2	− 8.4	16.8	24.2	+44.0
433	404	− 6.7	27.7	21.2	−23.5	14.8	21.7	+46.6
520	495	− 4.8	19.0	22.3	+17.4	17.1	22.5	+31.6
480	424	−11.7	16.4	14.3	−12.8	18.4	17.2	− 6.5
389	332	−14.7	15.4	15.7	+ 1.9	15.9	14.3	−10.0
Mean = −2.6 Deviation = ±9.7			Mean = − 1.4 Deviation = ±17.8			Mean = +13.7 Deviation = ±32.4		

for the determination of moisture were withdrawn from the mixed material and dried to constant weight in a vacuum oven at 60°C. The dried aliquots from each meal were reground, carefully mixed, and fresh aliquots from this dried sample were used for determinations of fat, nitrogen and caloric value. Fat was estimated by ether extraction in a Soxhlet apparatus, nitrogen by the macro Kjeldahl method (the factor 6.25 being used to convert nitrogen to protein), and caloric values by ignition in a Benedict oxy-calorimeter. The results thus secured have been compared with those obtained by calculation. For this purpose the food tables of the Canadian Council on Nutrition have been employed because these tables have been used in all the recent Canadian dietary surveys.

Table I summarizes the comparison. Since the food tables list average food values, both positive and negative variations are to be expected. Examination of the means shows that, in the case of calories, the calculated values are very close to the determined ones. In the case of protein the calculated average is slightly lower than the determined one, but, as in the caloric values, there is good agreement. This situation is reversed in the case of fat and the large discrepancy leads to the opinion that values for fat in the food tables may be too great. The deviation from the mean is significant in the case of protein and even larger for fat. Such wide deviations indicate that a record and analysis of at least twenty meals is essential if significance is to be attached to averages.

To illustrate the differences found between different tables of food composition calculations for the same twenty meals were made using tables in a widely used text on nutrition (Mary Swartz Rose: A Laboratory Handbook for Dietetics). The average differences between these calculated values and the analytically determined ones were worked out, as were the deviations. These are compared with similar data based on the tables of the Canadian Council on Nutrition (table II).

TABLE II

DIFFERENCES IN NUTRITIVE VALUE AS CALCULATED FROM TWO TABLES OF FOOD COMPOSITION

Table	CALORIES		PROTEIN		FAT	
	Average Difference*	Deviation†	Average Difference	Deviation	Average Difference	Deviation
Canadian Council on Nutrition.....	−2.5	±9.7	−1.4	±17.8	+13.7	±32.4
Mary Swartz Rose ..	−5.4	±8.0	−2.3	±21.7	+10.4	±23.9

*Average difference is the arithmetical mean of the percentage differences between calculated and analytically determined values.

†Deviation indicates the spread of the differences found between calculated and analytically determined values for individual meals.

It can be seen that there is appreciable difference between values calculated from the two tables. The use of the Council on Nutrition tables gives better agreement with analytically determined results for calories and protein but poorer agreement in the case of fat. This adds emphasis to the conclusion that figures

for fat content in the Canadian tables are probably too great. The differences found between the two tables indicates the need for using one set of tables in calculating the results of different dietary surveys, if the data from the surveys are to be compared.

Closer agreement between calculated and determined values might have been secured if calculations had been made for component ingredients of cooked dishes instead of using values given for food preparations of the same name listed in the tables. Considerable variations exist between different recipes for a given dish. Every attempt was made to eliminate this error in the dietary surveys conducted by this department, in which case individual recipes were recorded and used for calculations. However, in the present investigation, the more commonly used procedure was followed.

It should be pointed out that smaller discrepancies might occur if a large number of samples were studied, as in a dietary survey. Individual positive and negative differences might balance themselves more closely, giving much better agreement between average calculated and determined values. However, the results here presented indicate that care should be exercised in drawing conclusions from dietary surveys. They also suggest that consideration should be given to new determinations of the fat content of foods and subsequent revision of existing tables. In most food analyses, carbohydrate is calculated by difference and it may be presumed that, because fat figures appear to be too high, those for carbohydrate are too low. In recent dietary surveys fat-intakes have been rather greater than might be expected, particularly in the case of low-income families. Consumption of fat has generally been in the order of forty per cent of the total calories. The results recorded in this paper indicate that the survey results, secured by calculation, are reasonably accurate for calories and protein, but may be too high for fat and too low for carbohydrate. On the basis of a ten per cent discrepancy between calculated and actual intakes the fat supplies are probably about thirty-five per cent of the total calories, in place of forty.

SUMMARY

Comparison between analytically determined value for calories, protein and fat of twenty different meals with those secured for the same meals by calculation from the food tables of the Canadian Council on Nutrition shows that there is good agreement in the case of calories, fair agreement for protein and a definite discrepancy in fat. It is suggested that calculated values for fat intake in recent surveys are probably too high, while those for carbohydrate are too low. Deviations of differences between calculated and actual values for individual meals are so great that at least twenty meals should be used to secure an average food intake.

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THE THIRTIETH ANNUAL MEETING

THE less informed of those professionally engaged in the field of public health in Canada have undoubtedly gathered such information as they possess concerning the extent of the health program of the Province of Quebec from the statistical data annually presented by the Federal Bureau of Statistics, or from the frank admission of those administratively responsible for the provincial program. From such inadequate data some of us have, on occasion, been guilty of a pharisaical sense of superiority. To the many who were privileged to be present at the 1941 annual meeting, it was evident that a comparison of mortality rates could no longer be considered an adequate measuring rod in the matter of public health achievement. Evidence of sound administrative organization, well-trained personnel, and individual and collective enthusiasm was present on all sides. An appreciation of the size of the job and a willingness to tackle it in the manner most likely to meet effectively the local conditions appeared to characterize everyone from the Honourable the Minister to the office boy. A challenge had been thrown down and they had accepted it.

However, there was no attempt on the part of our French-speaking confrères to impress us with their accomplishments; rather the reverse. They were merely being our hosts for three days. If your interest lay in the academic sessions, they frankly told you their problems and corrective program and welcomed your criticism. If you were intrigued by the many points of historical interest in the capital city of the province, they were equally anxious that you should see them to advantage. The social side of the convention was emphasized, and nothing was left undone by Dr. Gregoire and the Committee on Arrangements to make the thirtieth annual meeting the best in the Asscoiation's history.

That this contention is not unsound is evidenced by the attendance, which was higher than that of any previous conference, with a registration of approximately eight hundred; by the adequacy of the local organization; by the overwhelming hospitality; and, lastly, by the sustained enthusiasm of all who attended.

One would be remiss if one failed to refer to the impressive character of the opening session on Monday afternoon, the very genuine welcome of His Honour

and Lady Fiset at the Vice-Regal garden party on Tuesday afternoon, and the formal dinner on Tuesday evening. On this last-mentioned occasion the enthusiasm for public health by the present Government of the Province of Quebec was evidenced not only by the words of the Honourable Adélard Godbout, Premier of the Province, but by the fact that on this occasion almost the entire membership of the Cabinet was present.

To the many present from every province in the Dominion, the Quebec meeting will long be remembered as a happy combination of all those things which make an annual conference successful.

THE IMPORTANCE OF THE MORAL FACTOR IN THE CONTROL OF VENEREAL DISEASES

DOCTOR GORDON BATES has presented much food for thought in his discussion of the problem of venereal disease control in Canada. He may well be regarded as one of the pioneers in venereal disease control on this continent. It was because of his initiative and enthusiam that the public were informed about venereal diseases and a public opinion created which made possible the conference called in Ottawa in May 1919 which resulted in the establishing of the Division of Venereal Disease Control in the Federal Department of Health and the granting of subsidies to the Provinces, as well as the creation of a national voluntary association to aid in controlling these diseases. During the years which have since passed, Dr. Bates has carried forward a program of public education and at the same time, in his capacity as director of the venereal disease clinic at the Toronto General Hospital, has maintained the closest contact with the clinical field. Few men, therefore, are better qualified to speak on the importance of this subject and to point out the needs which exist and the means whereby the problem may be more adequately dealt with.

Among the problems presented in the adequate control of venereal disease, Dr. Bates makes reference to the danger of a possible change in the public attitude towards sex morality. He has expressed his conviction that moral teaching and the improvement of social conditions are fundamental in the control of venereal diseases. He points out that there is a real danger that the widespread use of contraceptives and the use of methods of prophylaxis may change the public attitude towards sex morality. It is true that emphasis has been placed by public health authorities on methods of control apart from moral control, but this does not necessarily mean that the importance of moral restraint is not appreciated; rather, that the responsibility for moral instruction is not a function of the health department. Moral teaching is primarily the duty of the Church and of parents and teachers; and in this effort all the resources of the community, including the press, should be utilized. Dr. Bates's warning of the dangers which threaten if moral standards be reduced, and his emphasis on the importance of moral teaching, are most timely. The control of venereal diseases cannot be achieved by public health measures alone.

R.D.D.

THE ASSOCIATION'S WORK DURING 1940-41

(Part II)

REPORT OF THE COMMITTEE ON THE CANADIAN HEALTH CONSERVATION CONTESTS

GOOD public health is the result of a wide-awake and responsive public, a thorough understanding of health problems and needs, and a health-department staff equipped both with modern scientific knowledge and the facilities with which to put this knowledge to use. The Canadian Health Conservation Contests endeavour to utilize the resources of the community to develop sound public health work, to promote needed improvement in health services, and to assist in the reduction of preventable illnesses and unnecessary deaths. Basically, the plan affords the health officer an opportunity to enlist the cooperation of the leading laymen of the community who constitute the Contest committee; and to survey, by means of the preparation of a questionnaire known as the "fact-finding schedule", the accomplishments and needs of the department.

The Rural Health Conservation Contest was introduced in Canada in 1937, under the sponsorship of the Canadian Public Health Association and the American Public Health Association and with the financial support of the W. K. Kellogg Foundation of Battle Creek, Michigan. So enthusiastic was the response of the full-time rural health units eligible for participation that the Association felt that the opportunity for participation in a similar contest should be afforded to cities. Consultation with the medical officers of many cities indicated that they felt such a step should be taken, since during the critical days of war it is more important than ever that health departments be maintained and strengthened. Accordingly, with the cooperation of the American Public Health Association and the financial support of the Metropolitan Life Insurance Company, the first Canadian City Health Conservation Contest, open to cities of ten thousand population, was announced in August 1940. The response was most encouraging: more than twenty cities enrolled.

Interest in the Rural Contest, introduced four years ago, was more than maintained. More than thirty units enrolled in the 1940 Contest, a substantial increase over the number in 1939. For the Rural Contest, Canada is divided into two geographical groups, Quebec and the Maritime Provinces, and Ontario and the West.

The winners in the 1940 Contests—cities and counties placed on the National Health Honour Roll—were as follows:

THE RURAL CONTEST

Eastern Division:

Terrebonne County Health Unit, St. Jerome, Quebec.
St. Jean-Iberville-Laprairie-Napierville Health Unit, St. Jean, Quebec.
Nicolet County Health Unit, Nicolet, Quebec.

Western Division:

Peace River Health Unit, Pouce Coupé, British Columbia.
St. James-St. Vital Health Unit, Manitoba.

THE CITY CONTEST

Group 1. Cities over 100,000 population with full-time services:
Windsor, Ontario.
Hamilton, Ontario.

Group 2. Cities under 100,000 with a full-time medical officer:
Saint John, New Brunswick.
London, Ontario.

Group 3. Cities under 100,000 with a part-time medical officer:
St. Catharines, Ontario.

Inclusion in the Honour Roll does not mean that these are necessarily the healthiest cities and counties. It does mean that they have been judged by a group of health experts to have provided the most effective community-wide health-protection services for their people. In short, they are the cities and counties which have organized on a community-wide basis to solve as effectively as possible their public health problems, including water supply, milk supply, sewage disposal, tuberculosis, syphilis, maternal and child health problems, and industrial hazards. They are the cities and counties which have made greater progress in solving their own health problems than have the other participants in the Contests.

In addition to the major awards, certificates indicating "commendable attainment and improvements in public health" were granted to the cities of Lachine, Que., Montreal, Que., Three Rivers, Que., Kingston, Ont., Ottawa, Ont., and Vancouver, B.C., and to the following county health units in Quebec: St. Hyacinthe-Rouville, Laviolette, and St. Maurice.

One of the chief benefits which accrue to a participating unit is the opportunity for awakening interest in public health projects. Desirable advances are often planned, but not made, in the absence of public support. The Contests can give the necessary stimulus. They also furnish a large measure of fusion in bringing together different groups in a community and in getting them to focus attention on a needed project. Participation has demonstrated to communities and health departments the value of records, so that provision has been made for recording the health items and activities which are worthy of taking into account. The fact-finding schedules, when properly filled out, are documents of much value to the health department and to the community, and serve as measuring lines to evaluate the work of one year with that of other years, or with that of the same year in other centres.

Even though a city or county may not receive an award, through participation in the Contest it can obtain what is much more important: an intelligent knowledge of its health problems, commendation of its health achievements, frank analyses of its weaknesses, and suggestions for improvement.

To the American Public Health Association, the W. K. Kellogg Foundation, and the Metropolitan Life Insurance Company, the Canadian Public Health Association again expresses its appreciation of their cooperation in making the Canadian Contests possible. Much of the credit for the success of both Contests is due to Dr. James Wallace, formerly of the field staff of the American Public Health Association.

May 31, 1941.

J. T. PHAIR, *Secretary.*

REPORT OF THE COMMITTEE ON THE CERTIFICATION OF SANITARY INSPECTORS

THE establishment of a qualifying certificate for sanitary inspectors in Canada in 1935 marked the commencement of a new era in sanitary inspection in the Dominion. Although in several of the Provinces and in a number of cities there was a recognition of the importance of employing only sanitary inspectors who had received training and possessed a qualifying certificate, the situation in general was most unsatisfactory at that time. It was unsatisfactory both to the departments of health and to sanitary inspectors.

In the United States the American Public Health Association's Committee on Professional Education had not included the sanitary inspector in their deliberations because of the lack of preliminary education of many employed inspectors and the difficulties in establishing qualifications for that office. These difficulties have not yet been surmounted and that committee has been unable to make recommendations concerning sanitary inspectors.

In Great Britain the Royal Sanitary Institute and other bodies have for years provided facilities for training, conducted examinations, and awarded certificates. The certificates have, in the instance of the Royal Sanitary Institute, related to all possible branches of sanitary inspection and to "health visitors" (public health nurses), surveyors, smoke inspectors, food inspectors, and maternity and child welfare workers. In 1925 the Ministry of Health of Great Britain established a Joint Board with the Royal Sanitary Institute for examinations for a qualifying certificate in sanitary inspection. The requirement in regard to preliminary education is the equivalent in Canada of university entrance. Only the certificate issued by the Joint Board has been acceptable since that date as a qualification for employment as a sanitary inspector in Great Britain. The Royal Sanitary Institute has continued to issue a certificate in sanitary inspection, but this certificate, because of its different educational requirements, is not accepted as a qualification for employment except in certain of the Dominions.

Great Britain has always recognized the importance of the service which the properly qualified sanitary inspector can render; in fact, from the very commencement of public-health work in Great Britain a sanitary inspector was required to be appointed in every municipality under the "Nuisances Removal and Diseases Prevention Act". A medical officer of health was also required to be appointed by every municipality. In the great English Public Health Act of 1875 these two officers were required to function in every municipality. It is only to be expected, therefore, that Great Britain should have led in the movement for properly qualified inspectors.

The Provinces of Canada, with the exception of Quebec, followed the English Public Health Act, so that in the original provisions of public health organization in these provinces each municipality was required to appoint a sanitary inspector. No provision, however, was made for defining the qualifications for this office nor for training. It was not until the committee of the Canadian Public Health Association, appointed with the approval and endorsation

of the Provincial Departments of Health, took steps toward establishing minimum qualifications, that this long-felt defect in our public-health organization received attention.

In the matter of preliminary-education requirements, the Committee first required the satisfactory completion of two years of high school. In 1938 three years of high school were required; and after August 31, 1941, the requirement will be four years of high school or its equivalent in secondary-school education. The Committee has been fully supported in these steps by the representatives of the sanitary inspectors themselves as constituted in the Canadian Institute of Sanitary Inspectors.

Too much emphasis cannot be laid upon the importance of this requirement in order that the best sanitary inspector may be secured. The examination board has had ample evidence during the past six years that candidates with adequate high-school training are able to acquire the basic knowledge in sanitary inspection with greater facility than those who, though they have had considerable experience in some particular field of sanitary inspection, have not had adequate secondary-school education. Nothing reflects more on the sanitary inspector in his contact with the public than an inability to spell words properly, to speak good English, and to present correctly the simple facts relating to sanitary science. If the status of the sanitary inspector is to be raised to the level that the Committee believes is desirable, the sanitary inspectors holding the Canadian Certificate in Sanitary Inspection must demonstrate to their medical officers of health and to their communities that not only have they the basic essential knowledge but that they are capable of imparting it as effectively as do other members of the public health organization. The future of the sanitary inspector in Canada rests largely on the demonstration by those holding the Canadian certificate that they are properly qualified. To that end, therefore, the Committee is steadily moving to make the examinations a more adequate test of the fitness of each candidate.

The members of the Committee realize that their work has only begun. The situation requires the providing of means of training prospective inspectors. The publication of the MANUAL has been an important step forward. The report forms regarding field visits and the studies made by each candidate are helpful, but this provision is not adequate. With the establishing of four years as the minimum period of high-school training or its equivalent, the Committee believes that the next step is the provision of some type of supervised reading, available to all candidates who desire to take advantage of such facilities. It may not be possible to provide such training until after the war, but the Committee is not without hope in this matter.

The members of the Committee desire also to work closely with the Canadian Institute of Sanitary Inspectors in trying to provide a method of further instruction of those who hold the certificate. Without assistance, many inspectors will not be able to keep themselves informed of current practices and new methods. Much has been accomplished but there is real danger that what has been accomplished will be lost if those who hold the certificate fail to realize that the future of sanitary inspectors depends on their demonstrating the service which they can

render. It is not by collective action on the part of sanitary inspectors, requesting recognition or special privileges, that the status of the sanitary inspector can be raised: rather, such action may be wrongly directed and retard the whole effort. It is the responsibility of the Committee to give careful consideration to presenting the field of sanitary inspection to young men so that interested candidates may receive adequate training, thus providing sanitary inspectors of the future who will carry forward the splendid ideals which have characterized the leaders in sanitary inspection in Canada. With the establishing of standards and with suitable presentation of the subject through our high schools and technical schools, there is no question that the field of sanitary inspection will be attractive to many men.

I have left reference to the question of salary out of these remarks, for it is my conviction that sanitary inspectors will be suitably paid just as soon as there is a general recognition across Canada of the important service which they can give. This takes time, but such recognition will come only in proportion to the service rendered.

The 1940 examinations for the *Certificate in Sanitary Inspection (Canada)* were held in seven provincial centres on September 11th, 12th and 13th. Twenty-nine candidates completed the requirements of the Committee relating to secondary-school education and satisfactory field training in sanitary inspection. Of this number twenty-two passed in all the subjects of the examination; six were conditioned in one subject and will have to repeat it at a subsequent examination before the certificate can be granted; and one failed, having obtained less than the pass mark in two or more subjects.

The successful candidates and those conditioned in one subject were as follows:

British Columbia: H. P. Reusch, Vancouver.

Alberta: L. G. Alexander, South Edmonton (*Food Control*); B. B. Goodwin, Bellevue; E. H. Richards, Calgary.

Saskatchewan: P. W. Gibbons, Saskatoon; A. C. Hinton, Regina; P. Newall, Saskatoon.

Manitoba: F. Baker, Winnipeg; W. R. Bridges, Winnipeg; D. M. Graham, Winnipeg; T. H. Lackie, Winnipeg; I. Rose, Winnipeg (*Communicable Diseases*); M. Steiman, Winnipeg.

Ontario: J. H. Allen, Toronto; W. H. Bishop, Toronto; W. C. Boyd, Todmorden (*Communicable Diseases*); J. L. Griffith, Toronto (*Sanitation*); M. L. Hammond, Toronto; E. Lund, Toronto; D. E. Moore, Kenora; H. H. McFaul, Toronto; F. J. S. Shier, Toronto (*Sanitation*); R. E. Welsh, Camp Borden; W. G. Westover, Weston.

Quebec: V. Benoit, Montreal; J. R. Garon, Lac Megantic; J. Rancourt, Montreal (*Sanitation*).

Nova Scotia: W. J. Chisholm, Halifax.

As in past years, the responsibility for the conduct of the examinations was left with the provincial departments of health, the deputy minister of which

appointed the chairman of the provincial board. The chairman is responsible for the arrangements in general, the conduct of the oral examination, and the assignment of the subjects for the field investigation report. The second member of the board is chosen by the chairman and the third member is nominated by the Canadian Institute of Sanitary Inspectors. Whenever possible, the boards consist of a medical officer of health, a sanitary engineer, and a sanitary inspector.

The Committee gratefully acknowledges the cooperation of the following members:

British Columbia: Dr. Stewart Murray, chairman; Mr. R. M. Martin, C.E., and Mr. Reginald Startup, C.S.I.(C.).

Alberta: Mr. D. B. Menzies, C.E., chairman; Dr. G. M. Little and Mr. J. Butterfield.

Saskatchewan: Mr. J. G. Schaeffer, B.Sc., chairman; Dr. G. R. Walton and Mr. M. H. Kennedy.

Manitoba: Dr. C. R. Donovan, chairman; Mr. W. D. Hurst and Mr. James Arkle.

Ontario: Dr. J. G. Cunningham, chairman; Dr. L. A. Pequegnat, and Mr. Hugh McIntyre, A.R.San.I. In addition, the Committee is indebted to the following members for their assistance in the conduct of the oral examinations: Dr. R. D. Defries, Mr. D. S. McKee, and Dr. A. R. B. Richmond.

Quebec: Mr. T. J. Lafrenière, C.E., chairman; Dr. Ad. Groulx, and Mr. Aimé Cousineau, C.E.

Nova Scotia: Dr. P. S. Campbell, chairman; Dr. D. J. Mackenzie, and Mr. H. W. Johnston.

The examination papers in the three written subjects were as follows:

SANITATION

(Thursday afternoon, September 12th)
Time: 3 hours

1. John Smith, a contractor, proposes to erect a 6-room dwelling house on a lot sloping steeply toward Blank Street. He has sublet the contract for plumbing to James Brown, a master plumber who holds a licence from the municipality. The dwelling is to have the following fixtures: Three-piece bath on the second floor, sink in the kitchen and fixed laundry tubs in the basement.

(*b*) Illustrate by a sketch the essential parts of such an installation to the point where the connection is made to the sewer on Blank Street.

(*b*) Describe the procedure needed to obtain the approval of the municipal authorities for this installation.

(*c*) Describe the inspections that would be made by you, as an inspector of plumbing. When should such inspections be made? Include in your account any tests you might use.

2. (*a*) What diseases may be transmitted to humans by water?

(*b*) Describe the essential features of a properly located and constructed dug well.

(*c*) What are the purposes of water filtration? Name the types of water-filter plants used by municipalities and describe *one* type.

3. You have been appointed sanitary inspector of a town of 5,000 population. What information would you attempt to obtain by means of a sanitary survey and how would you proceed to conduct such a survey? Indicate the form of your report to the medical officer of health, giving suitable headings for the presentation of the findings.

4. (*a*) Describe the construction and principle of operation of a septic-tank installation for a rural home. Illustrate your answer by a sketch.

(*b*) Describe the construction and maintenance of one type of outdoor privy. What other types may be used?

5. Write short notes on the following:

(*a*) Methods of refuse disposal in an urban municipality.

(*b*) The control of flies.

(*c*) The chlorination of a municipal water supply.

FOOD CONTROL AND LEGISLATION

(Friday morning, September 13th)
Time: 3 hours

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1. (*a*) What diseases may be transmitted to man through milk?

(*b*) A farmer with a herd of twenty cows wishes to sell milk to a dairy in a nearby city. Enumerate the various points to be observed in making an inspection for the granting of a licence, indicating the requirements which would guide you in making your report.

2. A butcher in a town of 5,000 population wishes to erect a slaughter house on the bank of a small river on the outskirts of the municipality. What requirements should be made regarding the location, construction, equipment, and operation of such a slaughter house?

3. You are required to inspect a restaurant which seats 50 persons. The owner is very willing to co-operate but has limited finances since the restaurant is in a poor section of the town. Describe your visit to the restaurant, the points you would note, and the advice you would give the owner, with special emphasis on dish-washing methods.

4. Discuss the pasteurization of milk under the following headings: (i) definition (according to the regulations of your province), (ii) the essential equipment in a small pasteurizing plant, (iii) possible defects in equipment and operation.

5. (*a*) An outbreak of food poisoning has occurred in a city. All who suffered illness were customers of one bakeshop. Describe the investigation which you would make and the inspection of the shop. What products are most likely to be the cause of the illness?

(*b*) What are the purposes of meat inspection as conducted in abattoirs? Describe the method of inspection and enumerate the conditions which may be found requiring the condemnation of a carcass.

PREVENTION AND CONTROL OF COMMUNICABLE DISEASES AND RELATED SUBJECTS

(Friday afternoon, September 13th)
Time: 3 hours

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1. (*a*) What are the characteristics of communicable diseases?

(*b*) Write a note on the modes of transmission of communicable diseases. Give examples of diseases spread by each mode of transmission.

2. A case of smallpox is reported in a lumber camp. Discuss fully the measures which should be taken for effective control of: (*a*) the case, (*b*) the contacts.

3. For what purposes is fumigation with hydrocyanic acid gas employed? Describe in detail the procedure of fumigating a dwelling house. What safeguards must be used?

4. In a retail fruit store having living quarters situated immediately behind the shop, a case of scarlet fever occurs in a child of 7 years. The family consists of three other children of school age and two adults. What steps would you take as quarantine inspector on being notified of the case of scarlet fever? What are the regulations relating to the occurrence of scarlet fever under these circumstances?

5. (*a*) State quarantine and isolation periods as required in your province for measles, diphtheria, and poliomyelitis.

(*b*) Name three diseases for which there are vaccines or serums for use in their prevention. Indicate in each instance how the preventive treatment is employed.

The Central Board on Examination and Registration was gratified with the results of the examination, which gave evidence that candidates are meeting the higher standards set by the Committee. Since the introduction of the examinations in 1935 two hundred and two inspectors have obtained the Canadian certificate.

May 31, 1941. J. G. CUNNINGHAM, *Chairman.*

REPORT OF THE COMMITTEE ON RESOLUTIONS

THE Committee on Resolutions, comprising Dr. G. F. Amyot, Victoria (chairman); Dr. Gordon Bates, Toronto; Dr. P. S. Campbell, Halifax; Dr. A. R. Foley, Quebec; Dr. F. W. Jackson, Winnipeg; and Dr. J. T. Phair, Toronto, presented the following resolutions during the thirtieth annual meeting of the Association held in Quebec, June 9th to 11th:

1. Be it resolved that the thanks of the Association be conveyed to His Excellency Major-General Sir Eugène Fiset, Lieutenant-Governor of the Province of Quebec, and to the Honourable Henri Groulx, Minister of Health and Social Welfare, for their gracious hospitality on the occasion of the Association's annual meeting.
2. Be it resolved that the appreciation of the Association be expressed to Colonel L. J. Boulanger, Chief of the Cabinet of the Prime Minister and Head of the Provincial Tourist Bureau; Doctor Jean Gregoire, Deputy Minister of Health and Social Welfare; His Worship Lucien Borne, Mayor of the City of Quebec; and to Doctor A. R. Foley and the members of the Local Committee on Arrangements, for their generous hospitality and their invaluable cooperation in the program arrangements.
3. Be it resolved that the thanks of the Association be extended to the Press of the City of Quebec for their cooperation and for the allotment of space given to the papers and deliberations of this meeting.
4. Be it resolved that the Association extend to the Management of the Chateau Frontenac their appreciation of the service provided for the members during the meeting.

5. Be it resolved that the felicitations of the Canadian Public Health Association be extended by a representative of the Association to the American Public Health Association at its annual meeting in Atlantic City in October.
6. Be it resolved that the Association notes with deep regret the deaths of a number of its members during the past year and requests that the Honorary Secretary be instructed to convey to the members of their families the sympathy of the Association in their bereavement.
7. Whereas the Canadian Life Insurance Officers Association has expressed interest in the work of the Canadian Public Health Association and appreciation of its activities by continuing to accord the Association financial support,

   Be it resolved that this Association express to the Canadian Life Insurance Officers Association its hearty thanks and assure the executive of the desire of this Association to further all measures designed to improve the state of the public health.
8. Be it resolved that the thanks of this Association be extended to the American Public Health Association for making possible, in cooperation with the W. K. Kellogg Foundation of Battle Creek, Michigan, the conduct of the fourth annual Canadian Rural Health Conservation Contest; and for providing this year the first Canadian City Health Conservation Contest in cooperation with the Metropolitan Life Insurance Company.
9. Be it resolved that this Association, in convention assembled, wishes to assure the Dominion Government of its earnest desire to serve the needs of Canada in every possible way in this time of emergency, believing that health services must be maintained at a high standard and further developed, and that the most complete utilization of the trained public health personnel of provincial and municipal departments of health should be made in order to promote to the fullest possible extent the health of both the armed forces and the civilian population.
10. Whereas there is a shortage of trained public health personnel, including health officers, nurses, engineers and laboratory workers, qualified to serve in Canada,

    And whereas this situation will become even more acute, endangering the health of the public through the lack of qualified personnel in official health services,

    Be it resolved that this Association urge upon the Department of Pensions and National Health immediate consideration of the problem of meeting this emergency through the development of a plan of cooperation with the Provincial Departments of Health and that the Dominion Government be requested to make grants-in-aid to the Provinces to enable them to recruit and train such personnel.
11. Whereas it is acknowledged that the need for the conservation of mental and physical health and fitness is greater today than at almost any time in the nation's history and that an adequate defence program calls for the maintenance to the highest degree possible of the health of every man, woman and child in the Dominion,

And whereas the essential post-war health of our people in Canada depends upon our carefully planned action during the war,

And whereas it has been clearly demonstrated and can be readily proved that an adequate sum wisely spent now will result in the saving of lives, health, and vast expenditures in the future,

And whereas it is recognized that individual and community health depend on community action,

And whereas medical science has contributed knowledge sufficient to make many or most types of disease preventable and to extend greatly the possibilities of the cure of illness,

And whereas failure of the public to take full advantage of this knowledge (although such knowledge has been readily available) has resulted in unnecessary loss of life, health, efficiency, and money,

And whereas this situation has been caused primarily by a lack of public awareness of the possibilities and benefits of the prevention of illness—a situation which must be corrected by public education,

Be it resolved that this Association urges that the Dominion Government, with the cooperation of the Provincial Governments, organized medicine, and such agencies as are interested in public health measures, embark on a nation-wide program of public education on these matters which so vitally affect our present war defence program and our future post-war strength.

12. Whereas the industrial output of Canada must be maintained at a maximum for war purposes,

And whereas to accomplish this it is necessary to conserve the health of wage-earners by every means at our disposal,

Be it resolved that war industry be urged to appoint such physicians and nurses as may be required for the supervision of the personal health and conditions of work of industrial wage-earners, their duties to include the supervision of first-aid for accidents and sickness, and early diagnosis and advice to ensure adequate treatment and minimum loss of time from work consistent with safety.

13. Whereas the problem of undetected and untreated cases of syphilis will lead to serious and costly end results,

Be it resolved that this Association urge the use of the routine serological tests in the examination of all persons who become members of His Majesty's Canadian Armed Forces.

14. Whereas scientific information is now available to guide individuals to choose food supplies which are optimal for growth, health, and working efficiency,

And whereas it is known that such optimal diets can be secured from Canadian food sources,

And whereas dietary surveys have shown that there are marked nutritional deficiencies in our urban population, deficiencies particularly of protective foods to supply minerals and vitamins,

And whereas these surveys have shown that a lack of nutritional information is an important cause of such deficiencies,

And whereas an increased use of Canadian protective foods would help to prevent deficiencies, would improve health, would help to limit the unnecessary use of foreign exchange, and would benefit Canadian farmers,

Be it resolved that this Association recommends to the Dominion Council on Nutrition that a national program of nutritional education be undertaken as soon as possible to help our citizens to choose foods wisely and to buy them economically, and that this Association offer to the Council on Nutrition its support and cooperation in such an undertaking.

15. Whereas milk is recognized as the most important protective food because it is a valuable source of calcium, phosphorus, vitamin A, thiamin and riboflavin,

And whereas consumption studies have clearly shown that the use of milk in Canada is much less than is desirable from the viewpoint of the maintenance and improvement of public health,

And whereas it is essential that consumers of milk be protected against milk-borne infections—protection which can be effectively provided without impairment of the nutritive value of milk by pasteurization,

And whereas it is also desirable to prevent exploitation of products containing milk but which may not have the food value of milk,

And whereas uniform regulations for the processing and handling of milk would be in the interests of public health and of the consumer,

Be it resolved that this Association encourages plans for education of the public regarding the nutritive value of milk; that Dominion and provincial officials be urged to enact legislation regarding milk, uniform throughout Canada, such legislation to contain a definition of milk to prevent the sale of inferior, misbranded products, and to provide for application of the effective process of pasteurization to all Canadian urban communities.

16. Whereas this Association, through its Committee on the Certification of Sanitary Inspectors, has endeavoured to improve the administration of public health through the establishing of standards for sanitary inspectors, and believes that properly qualified sanitary inspectors are essential in public health work,

Be it resolved that the Association again urges that municipal and provincial health authorities appoint only certified sanitary inspectors for full-time appointments, and for part-time appointments whenever possible.

RESOLUTIONS FROM THE SECTIONS OF THE ASSOCIATION

PUBLIC HEALTH EDUCATION

Be it resolved that health education, as one of the important phases of community health, should have a better-established place on the curriculum of teacher-

training institutions, and that the importance of an adequate program of health education in these institutions be brought to the attention of the Departments of Health and Education and to the proper authority in each such institution.

PUBLIC HEALTH NURSING

Be it resolved that the Study Committee of the Canadian Public Health Association continue to survey the field from time to time to discover problems in need of study.

Be it resolved further that in order to get the best results and to prevent overlapping of effort, when problems for study are found, they should be carefully considered from all angles and then referred to the existing group best qualified to conduct such a study. If no adequate group exists, it may be advisable to appoint a subcommittee for the purpose.

Be it recommended further that the Study Committee might also function as a central clearing station where a record of all public health studies under way in Canada could be kept on file and would be available for consultation by any group contemplating a study in this field. This should eliminate duplication of effort.

REPORT OF THE COMMITTEE ON NOMINATIONS

THE Committee on Nominations, comprising Dr. J. T. Phair, Toronto, chairman; Dr. C. P. Brown, Ottawa; Dr. R. O. Davison, Regina; Dr. C. W. MacMillan, Fredericton; and Dr. Paul Parrot, Quebec, presented the following nominations of officers for 1942 which were adopted by the Association during its thirtieth annual meeting, held in Quebec, June 9th to 11th:

Honorary President: The Honourable Ian Mackenzie, Minister of Pensions and National Health, Ottawa.

President: Dr. J. J. McCann, M.P., Renfrew, Ontario.

Vice-presidents: Dr. Grant Fleming, Montreal; Dr. Adélard Groulx, Montreal; Dr. B. T. McGhie, Toronto; and Dr. Arthur Wilson, Saskatoon.

Honorary Secretary: Dr. J. T. Phair, Toronto.

Honorary Treasurer: Dr. D. V. Currey, St. Catharines, Ontario.

Chairman of the Editorial Board: Dr. R. D. Defries, Toronto.

Executive Assistant: Mr. R. L. Randall, Toronto.

Executive Committee: Dr. Gordon Bates, Toronto; Dr. H. C. Cruikshank, Toronto; Dr. D. V. Currey, St. Catharines; Dr. R. O. Davison, Regina; Dr. R. D. Defries, Toronto; Dr. Grant Fleming, Montreal; Dr. D. T. Fraser, Toronto; Dr. Jean Gregoire, Quebec; Dr. Carl Hill, Lansing, Ontario; Dr. J. J. McCann, Renfrew, Ontario; Dr. J. T. Phair, Toronto; and Dr. G. D. Porter, Toronto.

CORRESPONDENCE

The Editor,
CANADIAN PUBLIC HEALTH JOURNAL,
Toronto.

AN interesting analysis of the report of the National Committee for Mental Hygiene (Division on Public Health and Medical Services) entitled "Study of the Distribution of Medical Care and Public Health Services in Canada" has been written by the distinguished journalist, R. S. Lambert, under the title "How Healthy is Canada?"* It is worthy of being carefully studied by every physician in Canada.

The following points are emphasized in Mr. Lambert's analysis.

(1) There is a general shortage of doctors, nurses, and dentists in the Dominion. According to the standard set by the United States Committee on the Costs of Medical Care, there should be one doctor for every 700-750 people. Canada does not measure up to this standard. She has, on the average, one doctor for every 1034 inhabitants, and one dentist for every 2566 persons—a shortage of 4679 doctors and 6323 dentists.

(2) A highly uneven distribution of medical services exists in Canada. For example, 28 per cent of the population of the Dominion (in cities of 30,000 or over) are served by 45 per cent of the doctors, 48 per cent of the nurses, and 49 per cent of the dentists.

(3) There is a much too high maternal mortality in Canada. As late as 1936, out of 26 leading countries, Canada had the fifth highest loss of mothers.

(4) Canada's infant mortality rate is the highest among all the white peoples of the British Empire.

(5) Public health expenditure in Canada is much too low. Out of 193 millions of dollars spent on health services in the Dominion, only 12 millions (or 6 per cent) were spent on public health and sanitation.

These are plain facts and must be faced sooner or later, by all of us.

For what they may be worth, this writer suggests the following two propositions in the belief that either one constitutes an approach, at least, to a cure of the ills of Canada's health system.

Scheme (A) consists of a system of socialized medicine for Canada under Federal control. This would include a planned distribution of doctors, nurses and dentists; a systematic bringing up of the number of health workers to the standard suggested by the American Medical Association and remuneration on a salary basis. Such a planned medical service would, undoubtedly, be the quickest and surest way of providing accessible and adequate medical care for every man, woman and child in Canada.

Scheme (B) is really a broadening and extension of the present health system and recommends the following:

(1) To offset the general shortage of doctors, the doors of Canada could be opened to admit refugee physicians in sufficient numbers to bring the standard up to modern requirements—i.e., one doctor for every 750 people or every 800 at least. It would be a wise and far-seeing policy for Canada to follow, whether looked at from the standpoint of health, or national economy, or even from the point of view of international relations.

(2) To correct the uneven distribution of health services between outlying districts and urban areas the Government should be asked to subsidize a sufficient number of young doctors, nurses and dentists as would be needed to secure adequate medical care to people in isolated and sparsely populated places. The grant should be sufficiently generous to allow young

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physicians and other health workers to marry and live in reasonable comfort. In addition, a State post-graduate fund might be set aside to allow the above doctors, nurses and dentists to return at suitable intervals to the larger centres for a post-graduate course to bring their medical knowledge up to date. The Government grants should be extended also to doctors, nurses, and dentists serving low-income areas in large cities.

A nation's greatest asset is the health, happiness, and security of its people. These should be, therefore, the first concern of any Government. So, then, let us do something about it and not be satisfied until the benefits of modern, scientific medicine are available for every man, woman and child in Canada. Which is no more than their birthright!

Lastly, even when looked upon from the point of view of Canada's war effort, the improving of the national health would, without doubt, constitute one of the greatest, if least spectacular, aids to Canada and the Empire.

HILDA R. B. WERDEN, M.D.
St. Catharines, Ont.

CURRENT HEALTH LITERATURE

These abstracts are intended to direct attention to articles that have appeared in other journals during the past month. Any of the journals referred to may be borrowed for three days or longer if desired. Address requests to the secretary of the Editorial Board.

A New Salmonella Type (Salmonella Havana)

IN November, 1937, in the Maternity Hospital in Havana, twenty-one newborn infants developed severe purulent meningitis. All died. From the spinal fluid of these cases a Salmonella strain was isolated which on bacteriological and serological investigation proved to be a new type and has been designated S. havana.

Fritz Schiff and Ivan Saphra, J. Infect. Dis., 1941, *68*: 125.

The Prophylactic Use of Sulfanilamide in Patients Susceptible to Rheumatic Fever

THIS study extended over a period of four years to determine whether sulfanilamide administered prophylactically prevents recurrences of acute rheumatic fever. Small daily doses of sulfanilamide were administered from October to June to adolescents and young adults who had suffered from one or more attacks of acute rheumatic fever, the last one occurring within three years of their inclusion in this study. A comparable control group was maintained for observation. Details concerning the rheumatic status of the individuals, the administration of sulfanilamide, its concentration in the blood and toxic reactions are presented. Major rheumatic recrudescences occurred in 10 per cent of the one hundred and fifty person-seasons observed in the control group and were entirely absent in the seventy-nine person-seasons in the treated group. Beta haemolytic streptococci were found in 12.2 per cent of 336 pharyngeal cultures from control patients and in only 4 per cent of 500 cultures from treated patients. Four deaths occurred among the controls and none in the treated group.

Caroline Bedell Thomas et al., J.A.M.A., 1941, *116*: 551.

Observations of Fecal Examinations in Poliomyelitis

SIGNIFICANT information about the distribution of poliomyelitis virus has recently been accumulated. Early observations on its occurrence in material from the human intestine have been amply confirmed, the virus having been recovered from the stools of both abortive and paralytic cases and from convalescent and healthy carriers.

Recovery of the virus from the naso-pharynx appears to require in most cases early examination, in contrast to stools where it may persist for considerable lengths of time, thus offering a means of case-finding.

The virus has also been demonstrated in sewage, which would seem to indicate a very heavy contamination.

The epidemiological importance of the above findings may be very real though as yet not understood. The virus would appear to be relatively stable and widely distributed and the questions of water supplies and an extra-human host merit reconsideration.

James D. Trask and John R. Paul, Am. J. Pub. Health, 1941, *31*: 239.

The Potencies of Commercial Anti-rabic Vaccines

THE relative immunizing capacity of vaccines against rabies was tested by means of a simplified mouse-test described in an earlier paper.

In the first experiment 45 lots of phenolized or chloroform-killed vaccine from one manufacturer were tested. The results indicated a considerable variation in the potencies of the different lots and approximately 8 of the 45 failed to immunize the mice satisfactorily. The challenge virus in this case was the same as that used for preparation of the vaccine.

Tests were then conducted on the stability of the vaccine. Repeated tests were carried out on a single batch of vaccine stored at low temperature for several weeks. Variations were met with due to the small number of animals used for a single test but deterioration of the vaccine was not evident.

The product of several other manufacturers was tested for its ability to protect against fixed virus. The results were disappointing and disturbing as they showed that much of the vaccine now being sold is of inferior quality and that a uniformly potent vaccine is not being produced by these makers at least.

Investigation of the protection developed against fixed and non-fixed viruses showed that the best vaccines against the latter also give a high protection against the former.

It would therefore appear that a mouse-test of vaccine potency made with fixed virus is a practical way of eliminating impotent commercial vaccines.

The strain of mice used for such tests is a matter of some importance.

Ralph W. G. Wyckoff and Walter C. Tesar, J. Immunol., 1941, *40*: 383.

The Dick Reaction and Scarlet Fever Morbidity Following Injections of a Purified and Tannic Acid Precipitated Erythrogenic Toxin

THE antigen used in this study was prepared from a highly potent scarlet fever erythrogenic toxin by precipitation with ammonium sulphate and then with tannic acid. A high skin test dose value with a low nitrogen content characterized this material. Grammar school children were given a course of three intradermal injections at intervals of two weeks, the dose for each injection being 0.1 cc. but containing 750, 3,000 and 10,000 skin test doses respectively. Observations of the effect on the Dick reaction and the incidence of scarlet fever were continued over a period of four years.

Many interesting results were obtained, and their significance is analysed by the author. As one might expect, the amount of antigen required to convert a positive to a negative Dick reaction varied widely with the individual but "a large majority of susceptible children responded favourably to the injection of an amount of antigen which is within the range of practicability." The permanency of a negative reaction appeared to be independent of the amount of antigen required to produce it. A negative reaction following clinical or subclinical immunization was somewhat more permanent than that following injection of antigen though the difference was not great. Analysis of the morbidity data showed that a nega-

tive Dick reaction whether acquired naturally or artificially was a dependable index of protection against clinical scarlet fever. The risk associated with having a positive reaction was found to decrease progressively with age, a fact of great significance in planning community-wide protection.

The routine used in this study as related to dosage, interval and injection method was practicable in nature as judged by sustained interest and attendance and absence of severe reactions. (For older groups such as nurses the course of injections is modified somewhat in order to avoid reactions.) Of those injected in this study 85 per cent became Dick negative and few individuals subsequently reverted to a positive Dick reaction over a period of 44 to 47 months.

M. V. Veldee et al., U.S. Pub. Health Rep., 1941, *56*: 957.

Borgia of the Woods

FACTS and fallacies regarding poison ivy, *Rhus toxicodendron*, are ably and concisely discussed in this article. Ivy poisoning is stated to be an allergic sensitization. Some people are much more sensitive than others but complete insusceptibility is probably a myth. The poisoning is due to the milky, oily sap and therefore the plant is dangerous at all seasons. The best means of prevention obviously is to recognize and avoid the cause. Recognition of the ivy plant is fortunately comparatively easy—in summer by its three-leaf sprays and in winter by the bare stalks and clusters of grayish-white berries.

Applications of vanishing cream containing 10 per cent sodium perborate and repeated every four hours have been found to give protection against heavy exposure. When exposure is known to have occurred, thorough and repeated lathering with soap and water is recommended. Recently, a toxin developed from poison-ivy leaves has been used successfully both for treatment and immunization. However, not all individuals respond. Ways and means for eradication of the weed are discussed.

Roger Kafka, Hygeia, 1941, *19*: 452.

Ptomaine Poisoning Doesn't Exist

SO-CALLED "ptomaine poisoning" or, as it is correctly called, "food poisoning" is first discussed in general terms and then in essential detail under the various causes. The author succeeds admirably in depicting modern thought on the subject in readily understandable language. The four causes of food poisoning are given as:

1. The food eaten is itself naturally poisonous.
2. Bacteria have made poisonous substances in once wholesome food.
3. Chemical poisons have been accidently introduced into the food.
4. Bacteria, themselves harmful to human beings, have been allowed to grow in the food.

Starting from this vantage point the true nature of food poisoning is accurately analysed and many fallacies scotched.

Dorothy V. Whipple, Hygeia, 1941, *19*: 285.

Diphtheria Immunization Drive

THE mass immunization campaign now fostered by the Ministry of Health receives searching scrutiny in this article, and dangers and pitfalls are pointed out. The recommended dosage is given as 0.1 cc. of alum precipitated toxoid followed by a final dose of 0.3 cc. one month later. The author voices grave doubts as to the adequacy of these small amounts of antigen when it is known that alum precipitated toxoid varies in its potency to begin with and is subject to some deterioration, particularly in the presence of certain preservatives. Such a program should certainly provide for confirmatory Schick testing or at least adequate sample post-Schick testing. In this way the failure of a batch of antigen or faulty dosage of a particular product would be detected. To carry out wide-

spread immunization on an inadequately tested basis is to jeopardize the whole future of this work. It is well recognized that a small proportion of children require a considerably larger dosage of antigen to produce immunity than does the average child. To attempt to use the smallest amount of antigen which will immunize the average child is to court disaster.

Guy Bousfield, Med. Officer, 1941, *65*: 169.

Treatment of Gonorrhoea

SULFONAMIDE therapy in gonorrhoea is now established practice and research is mainly directed to determining the best of the available compounds. This report presents results of treatment with sulfanilamide, sulfapyridine and sulfathiazole. The dosage of these drugs, frequency and types of reaction, general management of cases, and the criteria of cure are also discussed. In one group of 625 cases treated with sulfanilamide, 60 per cent were cured. A second group received sulfapyridine and of 85 cases 86 per cent were cured. The third group received sulfathiazole and 79 per cent of 57 cases were cured. Figures based on presumptive but not tested cures are given for three further groups. The percentages of presumptive cures for these groups were as follows: sulfanilamide 71.5, sulfapyridine 82.8 and sulfathiazole 82.9.

Reactions following the administration of sulfathiazole were significantly less frequent and less severe than with the other two compounds, and its therapeutic efficiency was approximately as high as that of sulfapyridine. These facts lead the authors to regard sulfathiazole as the drug of choice.

H. M. Elliott, Dale W. Imus and B. H. Silver, Ven. Dis. Inform., 1941, *22*: 197.

INDUSTRIAL HYGIENE ABSTRACTS

Industrial Health and National Defence

THE national defence program necessitated by the present emergency requires the mobilization of the medical profession in a vigorous health offensive. One vitally important phase of this program is the health and safety conservation of the industrial workers. Today the greatest need of industrial production as well as of military defence is manpower. To be adequate it depends on the highest type of mental and physical fitness.

In this article the author stresses the need of strengthening and broadening the entire industrial health program, not only in connection with private industry but also with regard to local state and federal jurisdictions. The thirty-nine state and local industrial hygiene units now existent in the United States should be rapidly strengthened. Additional ones should be organized without delay and funds provided to train additional personnel.

The industrial physician and the industrial hygienist have an important part to play. Much industrial medical work is now being carried on by private physicians on a part-time basis, but better organization is needed.

The basic objectives of industrial medicine and of military medicine are as follows: (1) to ascertain, by examination, the fitness of individuals for civilian work or military service, and to place individuals in activities consonant with their physical and mental assets and liabilities; (2) to maintain and improve the health and efficiency of those already employed or in government service; (3) to educate the worker or the enlisted man on matters pertaining to personal hygiene; (4) to reduce lost time and absenteeism from industrial occupation or military duty because of illness or injury.

In order to reach these objectives a definite program must be formulated under suitable medical direction. This should include all matters of general sanitation and environmental hygiene. The author particularly stresses the importance of physical examinations, both preplacement and periodic, followed up with programs for the control and correction of incipient diseases and impairments.

Leverett D. Bristol, J.A.M.A., 1940, *115*: 1235.

Diet and Health

AT the present time the maintenance of morale and of mental and physical efficiency is essential. That food is the most vital factor in maintaining the security and efficiency of the home front is a statement which few people would challenge.

In this article (an address given at a conference on "Feeding the worker in wartime") the author discusses nutritional science with regard to the worker's nutritional requirements. He explains the Oslo breakfast, a meal originally introduced into a school near Oslo by a Norwegian doctor, and since tried elsewhere. It consisted of milk, cheese, wholemeal bread, butter or vitaminised margarine, a good helping of salad, and a little fruit. The benefits to health have been not only obvious but spectacular. Although not practicable for the industrial canteen it nevertheless suggests certain types of foodstuffs which ought to be in the menu in order that workers may receive the essential nutrients. Such foods are wholemeal or brown bread, milk, potatoes, vegetables, salads, and cheese. Each food is discussed and a menu for a suitable three-course meal is given. On night-shift a worker likes a savoury snack rather than a meal, but this, too, must be nutritious.

The author feels that the adoption of the above plan would present two important aspects. Firstly, it would have a profound effect on health and on resistance to disease in the winter.

Secondly, such foods as milk, vegetables, potatoes, cheese and oatmeal are home-produced and if produced in sufficient quantities would give increased nutritional security for the period of the war.

J. C. Drummond, Ind. Welfare, December, 1940, p. 349.

Health Activities Pay in this Small Plant

IN this article the author, who is personnel director of Continental Mills, Inc., a small woolen manufacturing plant in Philadelphia with about 500 employees, briefly outlines the health and welfare program in that plant. Here, effective sanitation facilities, combined with meticulous housekeeping practices, contribute in large measure to the health and general well-being of the workers. None of the plans are costly but are conscientiously handled.

The buildings are old but are kept thoroughly clean at all times. Particular attention is given to sanitation facilities. There is a small but well-equipped dispensary with a part-time registered nurse in charge. She not only takes care of accident cases but also of many common illnesses which require medical attention in the beginning.

The drinking of milk is encouraged and facilities provided. Dispensing machines also provide other refreshments. The management recognize the fact that the fatigue period can be greatly lessened by a glass of milk or a bar of good candy.

A small plant library furnishes all types of reading matter.

Among other plans are an Employees' Beneficial Association, run by the employees themselves, but paid for on an employer-employee contributing plan which insures an income of $15 a week for an ill employee during his absence; a Group Insurance Plan also operated on a contributory basis, and a fund to which employees contribute voluntarily and which is used to help workers temporarily in need.

The management of Continental Mills, Inc., feel that the operation of this program has been responsible for the security and contentment felt by their employees. In addition the plant has been able to maintain a wage scale considerably above that of the industry in general.

Ada White, Occupational Hazards, December, 1940, p. 18.

Recent Studies and Theories on the Mechanism of the Action of Carbon Monoxide Poisoning

CARBON MONOXIDE is an important problem in industrial hygiene. It is generally assumed that the main principle of carbon monoxide poisoning is the formation of carbon monoxide hemoglobin which results in asphyxia. In this article the author maintains that the asphyxia produced by carbon monoxide differs from other forms of asphyxia in its physiological aspects, in its toxicological severity and in the seriousness of its sequelae, and he discusses briefly the following factors involved in the phenomenon and their possible effects.

1. The effect of the presence of carbon monoxide hemoglobin in the blood on the dissociation of the available oxyhemoglobin.
2. The effect of the presence of carbon monoxide hemoglobin on the removal and elimination of carbon dioxide in the lung.
3. The effect of carbon monoxide hemoglobin on the dissociation of oxymyoglobin.
4. The relation between carbon monoxide and pseudohemoglobin.
5. The effect of carbon monoxide on the circulation.
6. The effect of carbon monoxide on the heart action.
7. The effect of carbon monoxide on the nervous system, particularly on the brain.
8. The effect of exposure to carbon monoxide on the increase in spinal pressure.

W. F. von Oettingen, Transactions of the third annual meeting of the National Conference of Governmental Industrial Hygienists, Bethesda, Maryland, April 30, May 1, 2, 1940.